THE AUTOMOBILE

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Review of the New York Show.

Résumé of the Highly Interesting and Most Important Occasion from Divers Viewpoints—Prices and Deliveries Determined Sales to Agents—Attendance and Purchases Broke All Home Records.

HIGHLY interesting was the exhibition of automobiles and automobiie merchandise upon which the doors were closed last Saturday. This is perhaps the only statement with regard to the Madison Square Garden event that will compel the agreement of all. Out of the 45,000 visitors, including perhaps 30,000 different persons, none may be found to deny the great significance of the display, but in all likelihood their interpretations of the sights would vary radically could they be brought to book. The show was so many-sided and so large that any one visiting it merely once or twice might receive almost any impression, according to what happened to attract his attention and the previous bias of his mind.

A few supposititious opinions will illustrate how broad was the scope of the demonstration made at this show which was transformed into a gigantic salesroom and bazaar before it was two days old.

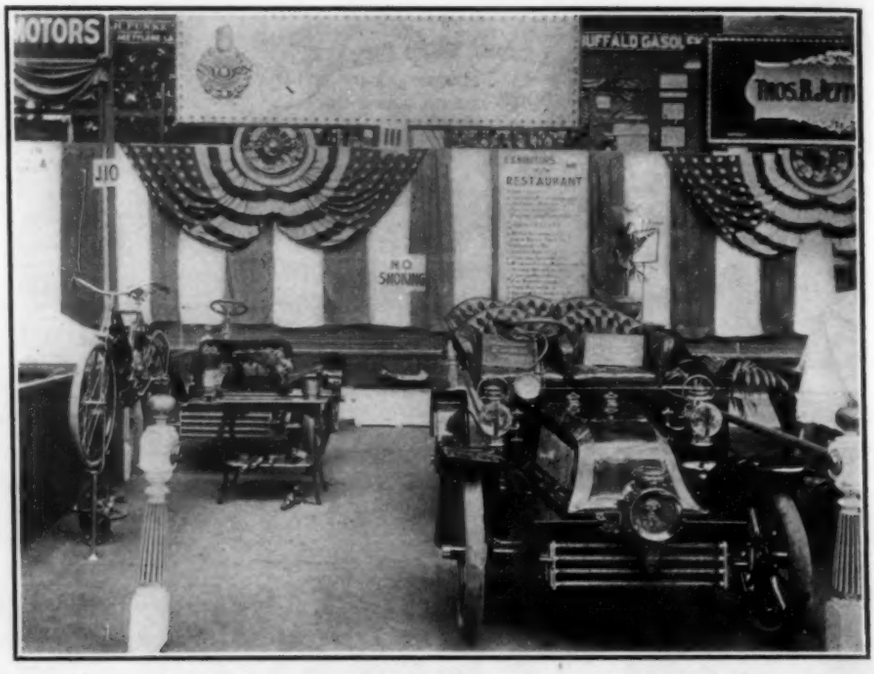
"There is nothing here approaching in real importance," would say the merchant on the lookout for business wagons, "the trucks and drays shown by two large manufacturing companies. Note that these imposing large vehicles, whose utility has been demonstrated and is moreover guaranteed by the makers, are all electric; all supplied with stored power. Only one heavy business wagon driven by gasoline motor on the whole show! None by steam unless you include the Elmira fire engine. Now what does this mean? Simply that the discovery has finally been made that electric power costs nothing. Yes, I say Nothing. Everybody who has use for a truck has a steam plant, which he has to run, and it adds absolutely nothing to the cost of operating it whether he charges his truck batteries from it or not. You buy your electric truck and one of the new dynamo outfits for automatic charging. You buy a guarantee, if you want to, at a fixed price per annum, and that is practically the end of your expense. Show me a gasoline or a steam truck that can equal this economy! And as for driving, no high-skilled mechanics are required. The whole question of urban and suburban cartage is solved. Everything else in this show is play."

French visitors, of whom there were many, including well-known names among European manufacturers of cars and carriage bodies; must have been astonished at the vigorous prosecution of automobile designs not at all countenanced in their own country. But it may be imagined that they looked upon these as mere crudities bound to give way before the sweep of their own successes in a few leading types. That "certain condescension in foreigners" noted by Lowell cropped out in their published remarks, thinly glossed over with the veneer of extreme politeness, but their viewpoint was shared by legions of New Yorkers. "Your imitations are getting deucedly clever," we can hear their thoughts, "and it really looks as if you were going to be quite independent of us in aluminum carriage bodies and upholstery. We shall evidently have to sell you the *châssis* only. There we have you beat to a standstill. Your best imitators are still far behind. Your motor castings are clumsy and heavy, your frames are much heavier than ours and not so strong. Your arrangement of piping and levers is awkward and complicated. Look at the crowds in front of the Darracq *châssis*, the Clement stand, the Decauville cars, the Mors *châssis* and Smith & Mabley's gorgeous exhibit, and you will readily see the trend of public opinion. Who made the large, genuine individual sales of high-priced cars but the importers and those American firms who had the best imitations of French cars? Why, there can be no question, from the showing made, that all will be obliged to come to our design, our frames, our motors, our workmanship, our finish. It is the rage of the show. Everything else is mere contraption; evidence of the chrysalis, the pupa stage in the industry."

Somehow, little comment is made upon the unpretentious De Dion & Bouton exhibit by Mr. Skinner, where a French type is presented which is fully recognized abroad, but has few of the external characteristics of the super-luxurious instrument of sport or pleasure reminds one more of the single- and double-cylinder motor-in-front cars intended for the middle classes by American manufacturers.

"I should consider this excitement over large four-cylinder road locomotives with Pullman car upholstery a good deal of a flash in a pan," says the faithful adherent of steam. "Men who can afford to own them are not going to spend their time tinkering with a mechanism which really calls for scientific training in those who shall keep it in order and remedy the troubles that arise on the road. And where will they obtain competent help? So long as it is just a fast and luxurious conveyance for the select few, the difficulties may not be insuperable. But look beyond this stage. Imagine that all vehicles were to be gasoline vehicles of the reliable, scientific pattern. A revolution in our public school system and our labor conditions would be required to keep them

running. Ultimately it may come to this, but for the present transition period it is inconceivable that gasoline cars should remain in front. They are costly to build in the only quality that makes them reliable, requiring an amount of skilled hand work which is not available in this country of automatic machinery, while steam vehicles may be produced in any quantity with the industrial organization already abundantly at hand and can be cared for and kept running with a class of hired help that is glutting the labor market. If the automobile is to be the generally accepted form of conveyance for persons and goods, the steam type must lead in number, and at this show the remarkable progress in steam car construction is the really significant feature. The Grout, the White and the Meteor cars show the adaptability of steam cars to new designs to be as pronounced as the flexibility of the motor power. Their condensers economize fuel and render the traveler independent of new gasoline and water supplies, the rapid circulation of the water removes deposits from generators and piping, and soon the general introduction of kerosene will increase their efficiency and reduce the cost of operation. Even those manufacturers who will not as yet fit condensers or adopt the motor or engine in front style are crowded with orders for the cheaper and simpler types of previous years and could not discontinue their manufacture if they wanted to. I venture to say, not only that the hold which the silent steam car has gained on American motorists cannot be broken, but must become much firmer than it has been, as soon as it shall have been made evident that the present demand for gasoline cars cannot be filled with any productive facilities now at command, and that these facilities under no circumstances can keep step with the growth of automobilism in this country, if any stress is laid upon workmanship and construction equal to that which is obtainable in steam cars.



THOMAS 8-H.P. TONNEAU AND 3½ H.P. MOTOR BICYCLE.

"For these reasons there is nothing in the show which can compare in significance with its brilliant demonstration of steam car possibilities."

The views of the steam enthusiast dip below the surface where the popular preferences have their play without much regard for the morrow. These are concerned mainly with gasoline motor cars, because they were greatly in the majority and resplendent in gay colors, polished trimmings and the glory of fashionable approval. Within the ranks of those who gave no serious consideration to automobiles propelled by any other form of power, the subdivisions were many, however, and all found confirmation of their special view in what the show produced. The lines of division were drawn by each according to his standpoint. To the dealers who had flocked to the exhibition in great numbers from all Eastern States, and much more numerously than in former years from the West and the South as well, the price question was second only to that of early deliveries. No price was too high for agents whose clientele was among the rich, and no price too low for those figuring on "many sales and small profits." The show was the beginning of a real "motor vehicle trade." Previously three or four manufacturers had operated a system of agents, mostly on a consignment basis, but at this show the retail dealer in automobiles, doing business on his own capital and on his own responsibility, made his first appearance with certified checks in his wallet and well-defined ideas of what he wanted and felt sure he could dispose of. It was the talk among manufacturers that this new phase in the commercial disposal of automobiles imparted a new solidity to the industry and warranted rapid extensions of production, such as never could have been contem-

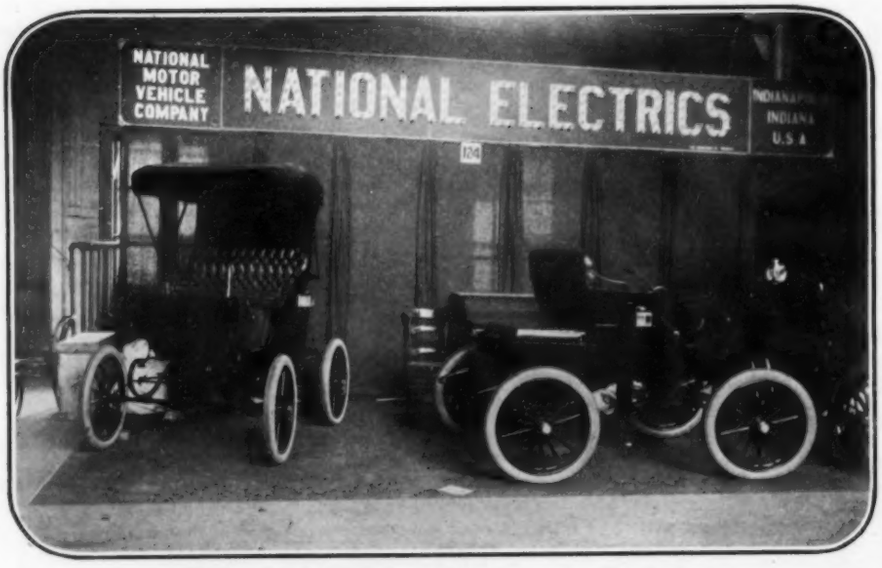
U. S. LONG DISTANCE MOTOR-FRONT DELIVERY WAGON.

plated on the basis of direct sales to the consumer. Astonishment ran high at the absolute willingness of those dealers, who had heretofore groped their way, to invest in any type or style which seemed to offer value for the price, whatever the latter might be. Undoubtedly this feature of the show greatly overbalanced any consideration of technique or fashion, from the financial point of view. The "bulls" of the industry had reason to be jubilant because prices from $3,000 up for American-made cars proved no obstacle to business, neither in gasoline or electric vehicles, while the new tonneau patterns in steam followed readily at slightly less. The "bears" could point with equal satisfaction to a repetition of last year's large sales of cheap runabouts supplemented by a new, substantial demand for the "touring cars" at prices below $1,500 which most of the makers of small vehicles were now offering in addition to their previous one-style output. And withal the enlarged runabout, phaeton style mostly, which was essentially a new creation by new manufacturers, made a place for itself without opposition, scoring strongly against the little car, it was thought at first; but manufacturers of the costlier specimens related in a pleased frame of mind that most of their sales of the "more than $3,000" class, to individuals, were made to persons who last year had purchased a little cheap vehicle with which to try out the principle of automobilism. In this fact were reflected the tone of the market and the public's general disposition to advance their liberality in lockstep with the progress of the industry. Altogether the orders for any one style of vehicle were seen to represent no reflection upon any other nor any permanent preferences by the public, but rather the natural diversity in financial ability or one of the successive stages in the public's education toward full acceptance of mechanical vehicles. In their totality the orders covered all varieties, each one in greater abundance than last year. The novices of 1901 and 1902 as a rule advanced toward more expensive cars than they had owned before, but the new contingent more than filled up the gap. The general expansion took care of all manufacturers who had not lagged behind in technical progress or disregarded the signs of the day.

Everything concerning automobiles has a triangular aspect: the automobile *per se*, as a machine and a carriage, engages attention, but so does the public's attitude to it, being an almost equally important factor; and the industry's interpretation of both these factors constitutes in itself a third one. With a multiplicity of types and styles, each and all subject to this triple consideration a mathematician can easily calculate several million culminations of ideas on the automobile subjects which were represented at the show, and the complexity of it all was in fact so bewildering that no one could hope to convey in words a mental picture of his impressions or a proportionate idea of the mere facts.

One of the points most likely to elude the investigator refers to a class of motorists comprising the better half of humanity the women. Their tastes and demands in regard to automobiles are by many manufacturers considered of the utmost importance, but they are rarely expressed with

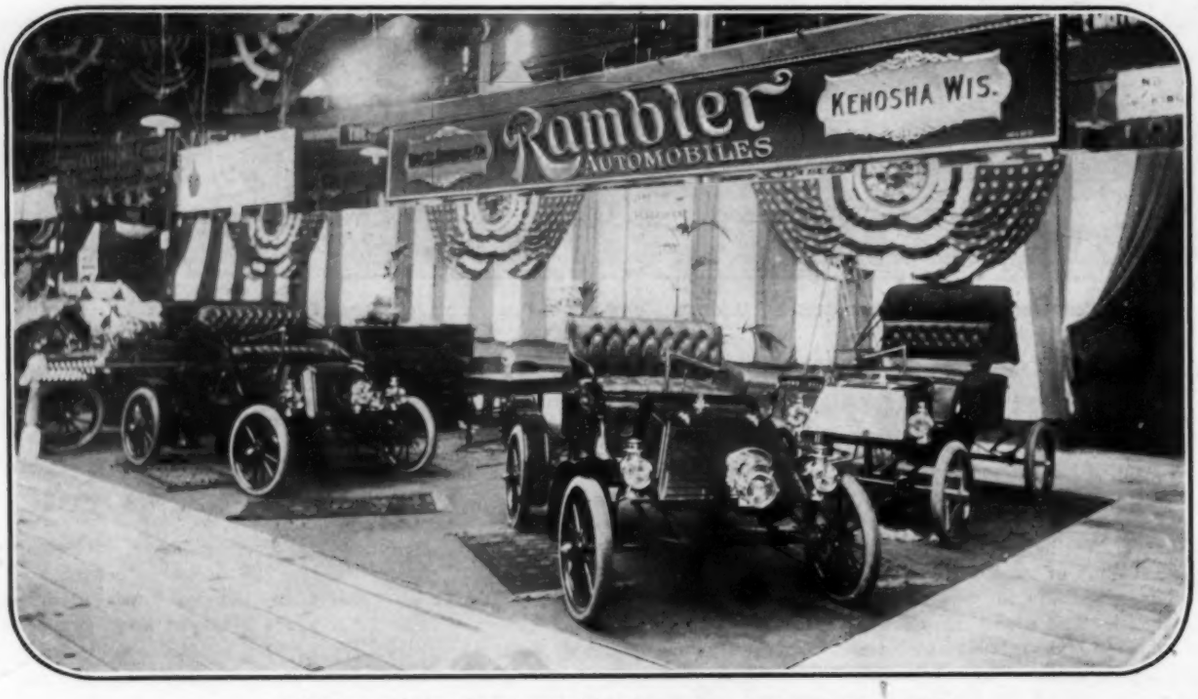
GENERAL VIEW OF MADISON SQUARE GARDEN, LOOKING FROM CENTER OF SOUTH BALCONY.



NATIONAL ELECTRIC RUNABOUT AND STANDHOPE.

the forcible directness of men's speech neither in the press or in the salesroom nor at exhibitions. Gentle woman has a smile of approval for any pretty and tasteful or imposing and gorgeous automobile, but when it comes to influencing the purchase of it she considers many other things, and what these things are it remains for mere man to divine as best he can, for woman, wiser than many of us, absolutely refuses to be carried away by theories of construction and judges solely from results. It would be presumptuous under these circumstances to say what women found most interesting at Madison Square Garden. All we can do is to surmise as to what would have interested them if they were in the habit of anticipating the future. They dwelled caressingly in front of the Edison storage batteries, regretting perhaps that neither high inventive ability, plenty of capital or public desire for some tangible manifestation of the occult qualities supposed to be vested in these neat parcels of power, has so far succeeded in drawing them out of mythology and show-land into the realms of recognized utility.

Before the ladylike electric carriages of the various makes fair woman stopped of course with critical survey of styles and upholstery, and the great improvement in design—mostly due to underslung batteries—probably did not escape them. A Cleveland man closely associated with the trade asserts that it is not the Winton or the Peerless or the Stearns or the International gasoline machines or any other of the excellent products of "touring cars" of the Middle States, which spell automobilism in the homes of the Ohio city, but the Baker, the Waverley and the National electric carriages with certain steam vehicles in the next line. The evidence of all muscular exertion and of all confusing uncertainties of gears in the operation seems to be uppermost in the feminine valuation of automobile virtues. The exceptions to this rule are to be sought, it seems, only in the hamlets and in the high-life of the metropolitan cities. But at the New York show the women visitors belonged largely to the latter set, and they regarded a French frame with its glistening steel girders and gear box with as much interested composure as if they did not mind a bit to wind a starting-crank or to throw in the reverse in an emergency. And they passed right by the special mechanism exhibited in the basement which seems to have been designed particularly with a view to making gasoline motor vehicles attractive to the gentler sex. This was the electro-magnetic speed-changing gear by which the speed of a gasoline car may be controlled, forward and backward without any appreciable physical exertion or jarring and with all danger of stripping gear teeth eliminated. What may be said against this method, if anything, will doubtless appear later when it is tried extensively, but at the show it was one of the features which a foresighted woman might readily be induced to pronounce the most important, especially as it disposes of the side levers that women usually object to, considering it sport enough to attend a steering wheel or lever, an ignition handle and a throttle, besides one or two brakes. The only rival to the attention

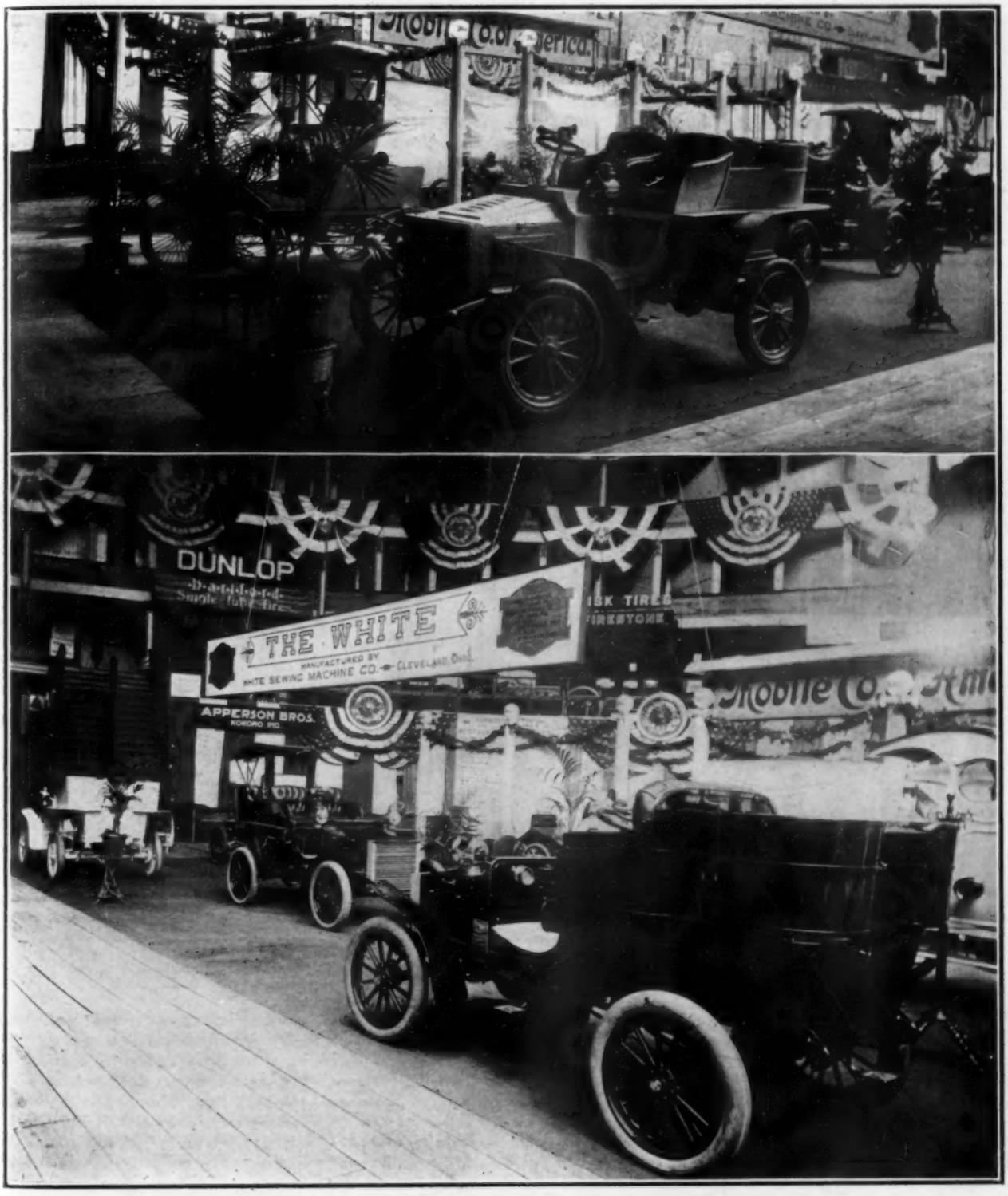


RAMBLER MOTOR-BACK RUNABOUTS, WITH AND WITHOUT TOPS.

of women ambitious of driving gasoline cars, was the Neftel machine in which a 10-horse power gasoline motor generates the power which is transformed into electrical energy, and of which several conditional sales were made during the week. The advanced type of this class of vehicles with electric transmission and power control, front driven and with no heavy auxiliary storage battery, was not shown here. When it comes, and the electric current of a small battery or compressed air may be utilized to start the gasoline motor, the family carriage and the fashionable turnout may be one and the same, and the average woman's interest in the gasoline cars at shows may become more than vicarious.

Descending again to the level of male creatures, there is no more difficulty in picking out the centers of interest. They are grouped according to technical convictions, or perhaps more according to road experience, on the principle that he who paid full price for a spavined horse is likely to look out sharply for spavin, but on the other hand may be tripped again by weak kidneys or "thumps."

As before mentioned, there were many at the show willing to concede the all-around superiority of the four-cylinder, ver-



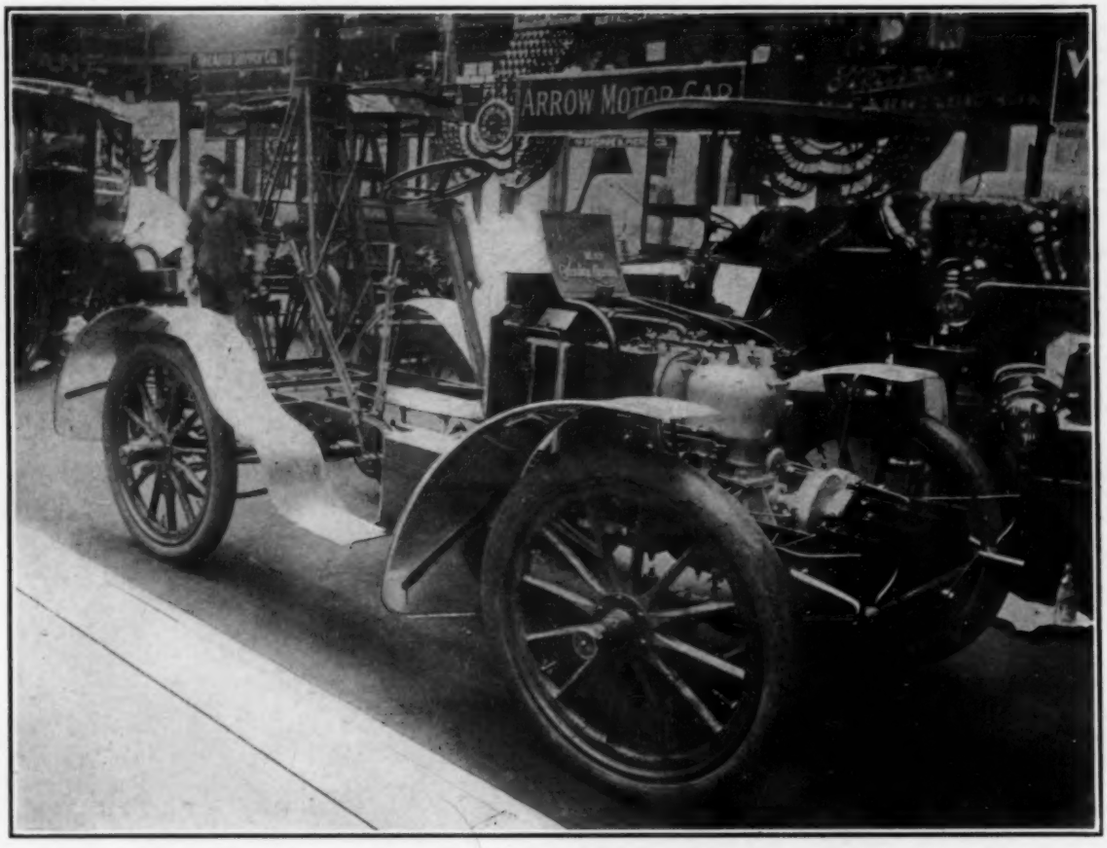
TWO VIEWS OF THE WHITE DISPLAY, SHOWING STEAM TONNEAUS AND STANHOPE.

tical front-motor machine with all valves mechanically operated, sheet-copper water jacket, throttling on the gas admission by hand and also by the governor, hot-air intake for the carbureter and auxiliary cold air intake for regulating the composition of the mixture; the whole mounted on a separate sheet steel frame hung as low as practicable on the vehicle, also made of pressed sheet steel, and driving a flywheel cone clutch in turn actuating a set of sliding gears in an oil-tight casing, either directly connected with the differential gear on a countershaft for double chain drive to the rear wheels, or continued by a bevel-gear shaft, with two universal joints, driving the bevel-gear on the differential on the "live" rear axle.

tance factory, the Moyea reconstruction of the Rochet machine, the Pan-American, the "La France," the Matheson from Grand Rapids, Mich., the Berg from Cleveland, the Locomobile Company's car designed by A. L. Riker, the Kensington, the Hall, the 24 horse power Columbia machine by the Electric Vehicle Company, the Brazier machine, and the model K Packard car were entirely new to the public, and in view of the departures from previous models the same might be said of the International, built in Toledo, the Peerless from Cleveland, the Automotor from Springfield, Mass., the Ward-Leonard, the Apperson, the Searchmont and the Pope-Robinson from Hyde Park, Mass., but the last named

front and now lately rejuvenated through the influence of the most modern Daimler—the Mercedes—and it seemed quite reasonable when many traders and visitors in search of cars without regard to price refused to look at anything not comparing to this type, which includes so many admirable features and gives room for a broad variation of carriage bodies, including many forms of utility wagons.

To an even greater extent than at the recent Paris show the insignia of this school of constructors were carried conspicuously at the forefront of each machine in the form of the elongated rectangular motor hood with mitred corners faced forward with the cooling apparatus, which has become



CHASSIS OF THE LOCOMOBILE 16-HORSEPOWER GASOLINE TOURING CAR.

Perhaps the enthusiasm for this system applies as much to the apparently minor variations of which it is capable as to the system as such, which, as here described, includes what is known as the Panhard as well as the Renault methods.

The most important variations are those relating to the cooling system, the rear axle construction when bevel-gear driven, the operation and accessibility of valves, and the manner in which a direct drive on the high gear is effected.

Of the American machines which follow this general plan the Wick machine from Youngstown, O., constructed by Mr. Smisor, formerly superintendent of the Long Dis-

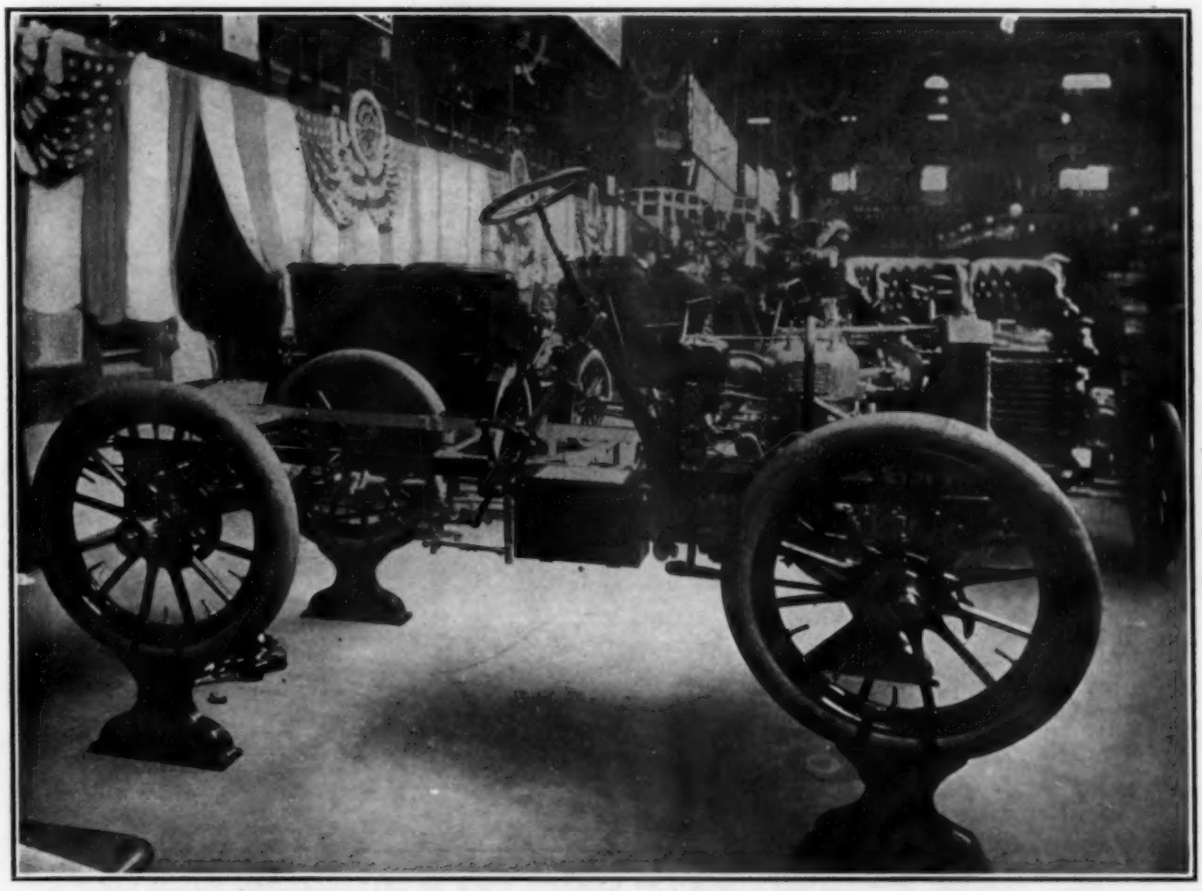
should perhaps not be included among cars of the French type here referred to, as it is equipped with a transmission gear that differs quite essentially from the ordinary sliding gear in construction and mode of action. In addition a number of smaller one- and two-cylinder motor cars of distinctly French type were in the show, such as the Pierce "Arrow" model, the Covert, the Foster and others.

From this partial enumeration it will be seen that there have been many converts among manufacturers to the general carriage plan developed from the original Daimler type mainly through Levassor's bold departure in placing the motor vertically in

generally known as the honeycomb radiator, but which at this show assumed many varying shapes more or less in accordance with the general idea of their prototype in the Mercedes cars. This idea is of course the distribution of the water in thin sheets contained in thin walled, flattened tubes exposed to the cooling action of the atmosphere on both sides, thereby greatly reducing the quantity of cooling water to be carried, dispensing with a special water tank, reducing weight and comprising the whole dynamic mechanism within a small space. In adopting this principle many of the exhibitors had evidently been great pressed for time, as all kinds of makeshifts were seen,

intended to show the manufacturer's intentions rather than his manner of carrying them out. It was thought good policy in some instances to place a water tank in front of the motor where the radiator would be expected (and of the contours expected), while hanging the real radiator made of the customary flanged tube coils below it. In other cases the desired effect was obtained by greatly reducing the tube diameters, increasing their number and preserving the flange system, the flanges being figured equivalent to the flattening of the tubes in cooling effect. This was the method adopted in the Peerless car and in a modified form in one of the Berg models, and described fully in this publication in connection with the Paris show reports, was not found in any of the gasoline cars, light or heavy, but a counterpart to it was a feature in the Studebaker electric vehicles.

In spite of all the admiration centered in the large cars of French or Mercedes conformation and the very general adoption of the ventilating fan for assisting the water cooling system on these cars, the show indicated a rapidly growing belief in the total avoidance of water cooling and the use of forced draft for air-cooled motors. In only one case, however, was the forced draft confined and positive. The machines representing this firm belief in air cooling, is driven by a single cylinder ten horse power motor cooled by a forge blower that sends a confined current of air through a system of winged copper flanges shrunk on the cylinder. All of the motor bicycles at the show also had air-cooled motors, but this goes almost without saying, as the water-cooled bicycle motors have not so far been noticed outside of England. The single cylinder motor in the Orient "Buckboard" is mounted on the rear axle. The motor shaft drives a fan revolving in the flared mouth of a cornucopia-shaped funnel which directs the air current upward and inward with its upper outlet facing the flanged combustion chamber. The machine



CHASSIS OF PEERLESS CAR, MOUNTED ON BLOCKS FOR EASY INSPECTION.

presents certain advantages in case of leaks or when repairs are required for other reasons. In another article the different methods are made the subject for special comment.

As the introduction of mechanically actuated intake valves necessitates new motor castings, for which the time required has been too limited, this feature also was not as common at the show as the opinion in their favor, and it may be expected that some manufacturers who did not incorporate it in the show models will adopt it later perhaps even in time for the Chicago Show.

The interesting rear axle construction of the French Decauville cars, which has been and all that it implies in simplicity of castings, reduction of weight and volume and obviating of winter troubles and pipe leaks, were the Knox, in which the pin radiation introduced by the Knox Company is still used; the Franklin, in which the principle has been extended to a four-cylinder, ten horse power motor; the Crest, which shows the single cylinder air-cooled motor mounted on the front axle, as usual; the Orient "Buckboard," which attracted very much attention as a happy American solution of the problem of reducing the automobile to its simplest form, and finally in the machine shown by the Backus Water Motor Company, which substantial carriage drives direct, having no variable gear or reverse.

No doubt a large number of show visitors felt perfectly justified in declaring the cars here referred to the most interesting and promising in the whole display, especially as the Franklin and the Backus vehicles include a number of other highly original features, well worth studying. In the Backus car, for example, the ignition and the throttle are "tied together" for convenience in operation, but a special movement is introduced for increasing the dimensions of the valve parts—an accelerator, in other words—when full charges are required with retarded ignition.

New Features in Construction.

If a comparison of the show just ended with that of about a year ago may serve as an epitome of the progress of the year, certain marked tendencies are immediately evident. Foremost, of course, and directly in line with previous shows, is the strong drift away from the shaftless carriage type of design in all sizes larger than the runabout, and in all three motive powers. Symptoms of this were seen a year ago in the electric carriage displays, and to-day the steam carriage is following suit. Three concerns, Grout Bros., the Meteor Engineering Co. and the White Sewing Machine Co., showed machines with tonneau manner of gasoline heavy cars. A unique feature in the Meteor car is the arrangement of this countershaft, which runs in a frame lying crosswise of the main frame and swung from a central bolt pointing fore and aft. Thus this frame is free to oscillate slightly, allowing the shaft to take the position most natural to it, regardless of the twisting of the main frame. The oscillation, of course, is limited by the amount of available twist in the chains, but apparently is enough for its purpose. These machines are in all probability but the pioneers of a numerous class, in which the weight will be better distributed and the pumps, double-acting brakes, and ratchet pumps for lubricating the cylinders. Most of the other steam vehicle makers showed steam water and sometimes steam air pumps of some sort, and the Meteor car at least had a Rochester pump for oiling the cylinders. Both the Mobile and Locomobile companies showed a number of heavy vehicles, touring cars, depot wagons, coupes, etc.; and the Locomobile Co. has an entirely new running gear for some of the latter, with front springs of the platform type and the front axle swiveled at the center to the underframe. The new Locomobile 10-horse power engine of 3 inches by 4 inches cylinder dimensions, used in the heavier vehicles, has a novel form of crosshead with a large hardened

WAVERLEY ELECTRIC AND TOLEDO STEAM AND GASOLINE CARS OF INTERNATIONAL MOTOR CAR CO.

body, wheel steering gear and either the boiler or the engine under a bonnet in front. Two of these machines, the Grout and White, use substantially the French type of running gear, while the Meteor car has full elliptic springs and a triangular underframe, to the forward apex of which the front axle is swiveled in the manner familiar in the older Winton and other American machines. In the White car the boiler is under the seat and the engine in front, and transmission is through a jointed propeller shaft and bevel gears to the rear axle. In the others the engine lies under the footboard and drives a cross countershaft, containing the differential, through a short chain. The rear wheels are independently driven by chains in the usual steering qualities greatly improved over the type now most common.

The Locomobile and Mobile companies, whose conservatism in this phase of design has apparently made them willing to await the lead of others, show improvements mainly in the direction of greater weight and solidity. The Mobile Co. has found a boiler feed regulator on which it is willing to bank, even to the extent of omitting the gauge glass. It operates on the float principle, and is supplemented by a low water alarm working on the same principle. The latter, when the water gets too low, permits a jet of steam to escape near the dash where it will be seen by the operator. The Mobile carriages are equipped also with Overman steam water steel roller, or, rather, wheel, in place of the ordinary rubbing surfaces, not unlike the familiar Stanley ball crosshead. The same engine has permanent ratchet handles attached to the caps of the valve rod stuffing boxes, and the eccentrics are surrounded by roller bearings with numerous small rollers in split brass cages.

It is noticeable that in none of the steam cars having the boiler or engine in front was any attempt made to lag the main steam pipe from the boiler to the engine. Inquiry as to the reason for this surprising omission elicited no more satisfactory answer than that the makers did not consider the point important enough to justify a clumsy appearance in the pipe. It must be admitted that in one or two cases the

pipe was quite short, but notwithstanding this, we may expect in another year to see appearances subordinated to correct engineering practice.

Coming now to the gasoline vehicles, which greatly predominated in point of numbers, one of the things most marked in general tendency was the immense increase in the number of light runabouts of the so-called "American type," having a horizontal single cylinder motor under the seat and a two-speed transmission, usually by planetary gearing, to the rear axle. The remarkable popularity of the Oldsmobile is doubtless the explanation for this phenomenon, and with the increase of competition we may expect to see material improvements in runabout design and workmanship before another year. It must be confessed, however, that the American type of runabout is just now in greater need of the refining touch of the engineer than any other class of motor vehicle. A possible improvement in most of these machines over their prototype is the use of reachless running gear. This, however, while steadier on a smooth road, may with semi-elliptic springs be too stiff on a rough road, and is necessarily somewhat more expensive. Whatever else may be said of the Oldsmobile, it would be difficult to imagine a machine of greater intrinsic simplicity.

The second marked tendency was the steady gravitation in nearly all machines, other than runabouts, toward the French type. This showed itself both in the number of newcomers with out-and-out French design, and in the production of new models on French lines by prominent concerns heretofore identified with independent types. Where this did not extend to the arrangement of motor and transmission gearing, it still showed itself in the running gear, which in nearly every machine of importance is now the reachless type.

This general abandoning of a familiar type for one relatively untried has naturally resulted in some anomalies. Noticeably in several prominent machines, the springs are so short and flat as practically to prohibit those vehicles from traveling Conspicuous instances of this are seen in one or two well-known touring cars of fairly high power, one of which, to make the matter more singular, is of purely American origin, but which is practically spoiled for the purposes of a touring car in this country by its inadequate springs. In this connection it is worth remarking that the French themselves seem to be quite generally increasing the length of their semi-elliptic springs, rear springs 40 or even 44 inches in length being not at all unusual nowadays.

Among individual features noticed in American cars more or less French in their design, one of the most unusual was a rear axle of cast steel, with four deep ribs, in the Walter car. This machine uses shaft transmission, and it is evidently very convenient here to make the rear axle of cast steel—split, of course, to introduce the differential—the main objection to it being its weight.

In the Pan-American car, the false frame structure may be described as built up around a cast steel barrel bolted crosswise under the main frame, and containing the differential and the countershaft, thus obviating the necessity of universal joints in the latter. The rear end of the false frame is bolted to this barrel, and it is likewise supported along its sides by two pairs of brackets, while its front end is swiveled in the middle to the main frame, the intention being to permit the latter to twist or spring without affecting the alignment of the engine and gear case carried on the false frame. This construction would seem to sacrifice a good deal in the way of lightness for the sake of avoiding universal joints, and the Pan-American was certainly one of the heaviest cars for its power at the show. The engine of this car had the unusual feature of concentric inlet and exhaust valves, the exhaust valve being substantially barrel-shaped and forming a cage for the inlet valve. It may be doubted whether the theoretical advantages of this construction outweigh the drawbacks of excessive weight in the exhaust valves and possible leaking of the inlet valve on its hot seat. However this may be, it must be admitted that the arrangement, such as

(Continued on Page 142.)

OLDSMOBILE DISPLAY, SHOWING NEW TONNEAU, COUPE, RUNABOUT AND CHASSIS.

Foreign

NEW CLASSIFICATION OF RACING CARS PROPOSED.

FRENCH AGITATION FOR CHANGE.

Association of Automobile Manufaturers Has Under Consideration Plan to Rate Machines According to the Cube of the Cylinders—Classification Will be Adopted in Ardennes Races.

Staff Correspondence.

PARIS, Jan. 16.—So rapid is the progress of automobilism that principles which are laid down one day as established factors very soon become obsolete, and have to be replaced by something more suitable to new and constantly changing requirements. Despite the wonderful development of the industry it is far from having settled down on definite lines, and in striving after perfection manufacturers find themselves continually confronted by new problems which lead them to unexpected issues.

A case in point is the system of classification of racing vehicles which was inaugurated at the beginning of 1901, when the limit of weight was fixed at 2,200 pounds for big cars and similar restrictions were placed on light carriages and voiturettes. The idea of this weight limitation was to prevent makers from developing their racing cars on lines which were calculated to have an unsatisfactory influence upon the design of touring carriages. Up till then manufacturers had been simply increasing the powers of their engines and by using heavy and powerful motors they had to provide for greater stresses, with the result that the running gear was strengthened and the frame reinforced. As the motor took up more space the dimensions also had to be increased. There was consequently a tendency to augment weight all round, and the only question which troubled makers was the limitation imposed upon them by the pneumatic tires. The racing machine bebecame an unwieldy vehicle which had little in common with the touring car, and the carriages put on the market derived no profit from the efforts of manufacturers to evolve an abnormal type of vehicle in which everything was sacrificed to power and speed.

RESULTS OF WEIGHT LIMITATIONS.

Since the weight limitation was enforced the results have been surprising for the touring cars, which are in every respect copies of the racing machines modified to suit the requirements of ordinary buyers. The necessity of keeping down weight has compelled makers to pay more attention to the efficiency of their engines. The weight for a given power has been considerably reduced. The new engines are therefore lighter, and the practice of some makers in employing steel cylinders has suggested another modification in the direction of securing independence between the cylinders and also the valves so that any part can be seen to without interfering with the rest. The motors are fixed or suspended in a more rational manner. The secondary frame has been suppressed in the big cars, and the transmission gears have been simplified, all parts not necessary to their efficiency having been suppressed. The cooling arrangements have also been perfected. In a word, the weight restriction has compelled makers to improve their motors, gears and frames in the way of lightness, strength and efficiency, which are factors of quite as much importance in the touring car as in the racing machine.

Having got to this excellent result it might have been supposed that automobile firms would have been perfectly satisfied to let things remain as they are. But they find that while the weight limitation has had an excellent influence upon carriage design it has also revealed serious drawbacks in the construction of the racing vehicles themselves. The limit of the light racing carriage, for instance, is 1,340 pounds and of the voiturette 880 pounds. During the races last year makers experienced the greastest difficulty in getting their vehicles down to these weights. They could not afford to sacrifice the powers of their motors, and when manufacturers are competing so keenly, and are trying to get the most powerful engines into their vehicles, they prefer to cut down weight in other parts of the vehicle. It was a common thing for a 12-horse power motor to be fitted into a voiturette. To compensate for this, manufacturers removed the carriage body altogether and simply fixed boards across the frame, to which was bolted a tank seat for the driver. Every ounce of weight had to be cut away, and even the brakes were dispensed with. Such an experiment could not be continued without running the risk of serious accidents which might affect the whole future of automobile racing.

In this respect the weight limitation was a failure. The makers of light carriages and voiturettes wanted to get over the difficulty by having the vehicles weighed with-

SEARCHMONT 10-HORSEPOWER TOURING CARS ON EXHIBITION IN THE GARDEN.

out the carriage bodies. They argued that if the weight limitation applied simply to the frame and machinery they would be able to fit any carriage body they pleased, and while providing the greatest security for the drivers the vehicles themselves would have a much more pleasing appearance, which is a matter of no small importance in view of the unfavorable impression made upon the public by racing machines fitted with very rudimentary bodies.

This is undoubtedly a satisfactory solution if only it were practical. But if the frames and machinery of the light carriages and voiturettes only are weighed, the same thing would have to be done with the big cars, and thus there would be a raising of weight all round and the regulations would entirely fail in their object.

Manufacturers are now trying to find another way out of the difficulty by suggesting a new clasification of racing machines according to the cube of the cylinders. For each class of vehicles the cylinder cube must be the same, and it is urged that by using this factor for the classification the results will depend solely upon the efficiency of the motors and not so much, as at present, upon the powers which manufacturers are able to put into their vehicles. It is clear, however, that if this result is to be attained the cylinder cube must be accompanied by other factors, such as the piston speed and the gear, so that all the competitors will race under identically the same conditions. If this were done the results of a race would depend entirely upon the efficiency of the motor and the transmission gear as well, of course, as upon the skill of the driver.

A contest under these conditions would certainly be extremely interesting, and would tend to the development of the automobile in the same way as the weight limitation. It is probable even that if the Automobile Club of France holds out for its present classification the two systems may be combined, as if all the makers have to employ the same cylinder cube they will not be able to compete with each other by augmenting powers.

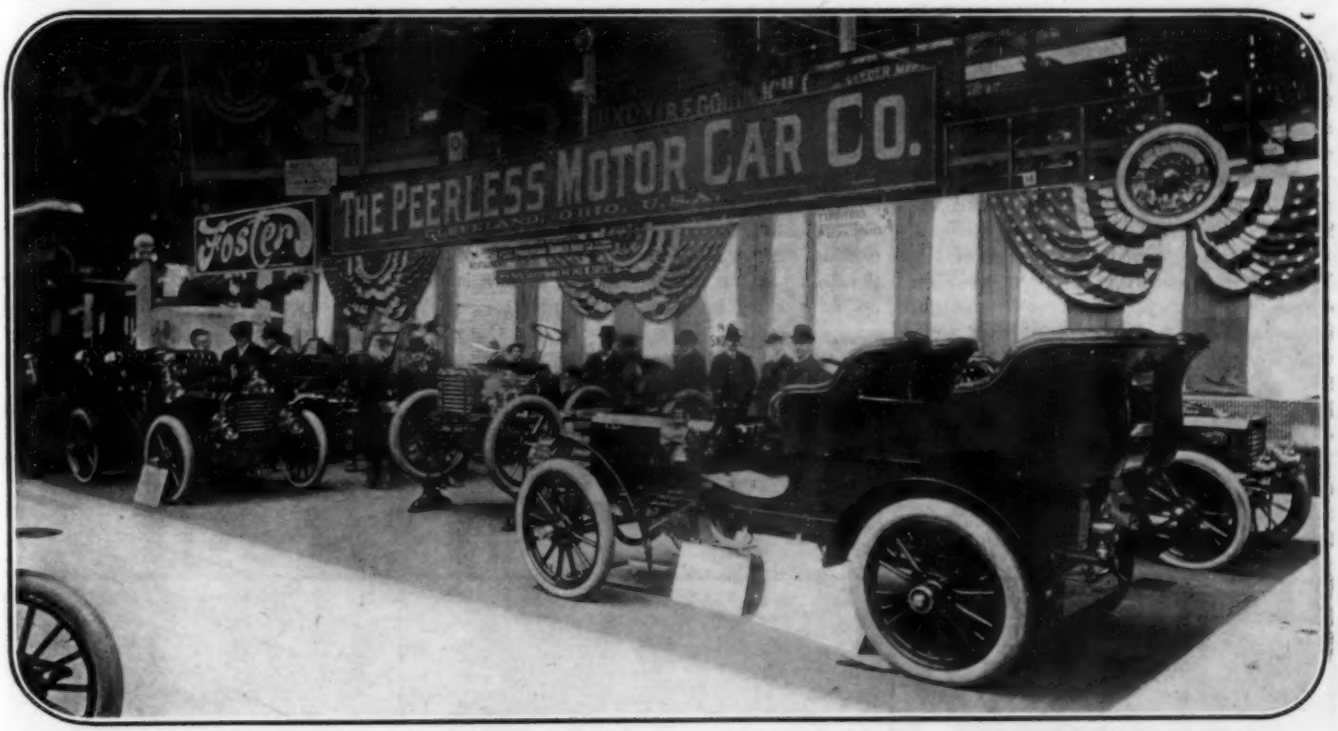
It might have been supposed that the makers themselves would object to being tied down to a definite type of motor, even though it would offer the fairest conditions under which a race could be held, but so far it seems as if the opinion of manufacturers has gone solidly in favor of the proposed new classification, there being only a few makers, such as Gobron-Brillié, who are opposed to it. The Chambre Syndicale de Constructeurs d'Automobiles has taken the matter in hand, and M. Max Richard and M. Brillié have been requested to report upon the scheme and recapitulate the arguments for and against the new classification. If the Chamber finally adopts the proposal to classify racing machines according to the cylinder cube the regulations will be drawn up and presented to the Automobile Club of France, who will no doubt adopt them, for the club is hardly likely to go against the wishes of the majority of makers in whose interests the races are held.

CLASSIFICATION FOR ALCOHOL RACES.

Meanwhile it has already been decided to adopt this new classification in the circular race of 500 kilometers which is to be run off in the French Ardennes, and for which the date of July 19 has been fixed. This race will be organized upon exactly the same lines as the Belgian Ardennes Circuit last year, that is to say a circular course will be selected without neutralizations, over which the vehicles will run the required number of times to complete the entire distance. The promoters have yet to obtain permission to run the race, though as they have decided that alcohol only will be used it is extremely probable that the Government will facilitate the carrying out of this event in every possible way.

Miscellaneous Notes.

At the opening of the Stanley Automobile Show in London, January 15, Sir Albert R. Rollit, M. P., urged on the British manufacturers the necessity of being well represented at the St. Louis Exposition. He expressed a hope, also, that the British manufacturers would not fail to compete in the shows held in America.



PEERLESS STAND, SHOWING HUGE, LUXURIOUS TONNEAU AND CHASSIS RAISED ON BLOCKS.

In Pittsburg there are 530 automobiles in use, of which 56 per cent. are used exclusively for pleasure parties, 40 per cent. for business and pleasure combined, and 4 per cent. exclusively for commercial uses.

The Automobile Club of Great Britain has now a membership of more than 2,000. Five years ago the membership was less than 200.

A bill to regulate the speed of motor vehicles on the highways in New Hampshire has been introduced in the Legislature at Concord.

A Retrospect of the Steam Vehicle.

Progress of the Show Seen in Adaptations Rather Than in the Discovery of New Principles.

BY HUGH DOLNAR.

Now that it is absolutely certain that one of the great things we have to do, is to construct wagons for use on common roads which will propel themselves, the wagon motor becomes of vital interest to the world at large, and there is much to be done in the matter of motors to-day, and much to be profitably said in regard to automobile driving agents.

In point of fact, to go back, a little more than a hundred years, to the beginning of the present motor wagon, there was then no choice of motors which could possibly be applied to self-moving wagons. Steam engines were the only known means, other than sails, for dispensing with animal traction, and though sails have been quite often applied to land carriages the uncertainties of the winds which blow as they list, and often do not blow at all, put sailing wagons out of consideration as common road vehicles.

Cugnot, the inventive lieutenant of the French army who was the first man on record to come to grief because he thought he knew how to make a wagon drive itself, used a copper boiler, placed in front of his front axle, same as the "Meteor," Reading, Pa., automobile boiler was placed in the wagon shown at the Garden last week, and if Cugnot's boiler could have made steam enough to supply his engines, there is no telling what his wagon might have done. As things were, however, Cugnot's wagon boiler would only make steam for a very short run, and all the wagon did was to get Cugnot into trouble, and to finally land in a museum, where it now stands, a monument of one of those supreme follies of its own day, destined to become the supreme wisdom of a much later period of time.

In 1759, Dr. Robinson, then a Glasgow student, talked about wagons driven by steam, and in 1772 Oliver Evans of Philadelphia, actually did drive a wagon by steam, though the wagon was made for a boat, on the road, and in 1786 Evans tried to have the Pennsylvania legislature give him a patent on steam wagons, and did obtain a patent in that State on steam-driven flour mills, and in 1787 the State of Maryland granted Evans an exclusive right to build steam wagons in that State. Evans said then that he fully believed steam wagons could travel 15 miles an hour, or 300 miles in a day, and could carry passengers as well as goods; most people thought Evans was crazy, of course.

In 1784 James Watt took out a patent for driving wagons by steam engines.

In 1786 or 7 William Symington showed a model of a steam wagon, driven by a low-pressure steam engine, in Edinburg.

In 1802 Richard Trevethick made a steam wagon with a castiron boiler, having a vertical cylinder working upward, fixed in one end of the boiler, the piston driving a long top crosshead, from the ends of which connecting rods went down on each side of the boiler to the driving wheels. There is no very complete story of Evans' steam wagons, though there is good reason to believe he made them run pretty well, and Trevethick was the first one who left a clear record of steam wagons which would travel on roads or on rails, with considerable certainty; and he made so much money by his pioneer work in mechanical traction that he died in poverty, and was buried by charity.

William and Edward Chapman, England, patented a steam locomotive in 1812, and about this time a Mr. Brunton built steam tractors which ran on wheels, but were pushed along by feet and legs of iron, which were actuated by a steam engine, as it was not supposed, at that time, that smooth wheels turning on a smooth rail, could pull loads. Brunton's imitation of horse-feet and legs actually did drive pretty well, but as soon as it was discovered that wheels under load pulled good and strong, everything else was abandoned.

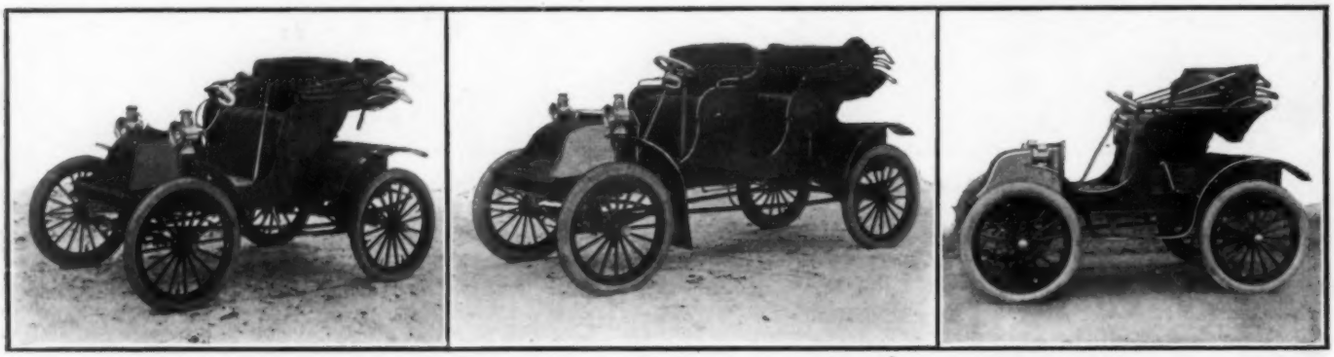
In 1814 and 1815 George Stevenson began with locomotives, and as he did not originate much of anything himself, but merely picked out the best of what others had ruined themselves to produce, he did very well, and is now credited with having invented all the others did, and is spoken of as the Father of the Steam Railway. Stevenson had sense enough to make steam locomotives earn money, and so, perhaps, fully deserves his reputation.

The first work of steam tractors was on rails, pulling coal, but there were plenty of inventors who thought steam wagons would do well on turnpike roads, and in 1821 Griffith had a wagon built with a boiler composed of two rectangular water legs, vertical, connected by many horizontal water tubes, fired with coal so that the heat passed up between the water legs and water circulation was not good, because the tubes were horizontal; if Griffith had inclined his water tubes he would not have been so very far away from our present Babcock and Wilcox boilers. As it was, the Griffiths wagon did not make steam, and so was a failure.

David Gordon took out patents on steam road wagons in 1822, and again in 1824, and his 1822 patent drawings show a close approach to the tonneau carriage body.

Gordon had trouble with his boiler, same as everybody else did in those days, and some do yet, and he finally obtained a boiler from Dr. Goldworthy Gurney, who was a careful investigator, and made sure of what he was about as he went along, and built good steam boilers for road wagons and had them at work successfully in 1825, in which year he took out a patent for a steam wagon propelled by mechanical feet and legs, which was a favorite plan in those days, and which may possibly be tried again, strange as the idea now seems. Feet move in the air, and standstill on the ground, same as a wheel does, but feet can make a wagon move directly sidewise, and some odd things may yet be done with carriages which are not only horseless, but wheel-less as well.

Dr. Gurney finally found that wheels alone would propel a wagon and give traction to spare, and so abandoned his feet-and-legs "propellers," and he also used a



HAYNES-APPERSON 8-HORSEPOWER RUNABOUT, 12-HORSEPOWER SURREY AND 8-HORSEPOWER STANHOPE.

STAND AND GASOLINE CAR OF THE AUTOMOTOR CO.

slotted crosshead instead of a connecting rod from piston to crank, but the water tube boiler was his strong point, and he worked it out so carefully and so exhaustively, that no one has ever done anything broadly new in water tube boilers since then, and the White steam carriage of to-day is very much the debtor of Dr. Gurney's inventions.

In 1830, September 15, the Liverpool and Manchester railway was opened to the public, with eight locomotives in service, which had horizontal fire tubes or flues in their boilers, and made plenty of steam. Guerney took out a patent for a steam stage coach in 1827. The boiler was placed at the extreme rear, in the "Hind Boot." A rotary blower was placed in the "Fore Boot" and forced air into the closed ash pit of the boiler. This steam coach had a pair of horizontal engines, working directly on the cranked rear axle, and one or both of the rear driving wheels was ratchet connected to the axle to make the wagon turn a corner more readily. Both wheel and lever steering are shown in the drawings. Dr. Gurney soon found his exhaust steam would make all the draft his boiler needed, and so abandoned the use of the blower. Having his steam coaches in pretty good form, Dr. Gurney built three of them for Sir Charles Dance which were put on the road in 1831, and ran for four months, and were then taken off because of special road tolls, in some cases amounting to ten dollars a trip. Very lately a steam carriage service was tried right here in New York city, from Cortlandt Ferry to Wall Ferry, which was also abandoned though not from special taxing. So history repeats itself, continually.

Great attention was paid to lightness of construction in the early boilers, and the use of small tubes was well known, the tubes being either fire tubes or water tubes, that is say, either surrounded by water or filled with water. In the fire tube boiler or "flue" boiler, the fire goes through the tubes, which are partly or wholly submerged in water; in the water tube boilers the tubes are wholly or partly filled with water, and have the fire about them.

Jacob Perkins, an American, did some curious things with really hot boilers in London about the time of the first steam wagons. Perkins wanted plenty of steam pressure, 600 pounds to the inch would do, but 1,000 pounds to the inch pleased him better, as he made steam guns among other things, and fired balls with steam instead of gunpowder, to make them go quickly. Perkins thought the right way for a boiler was to make it good and strong, say by boring an inch hole in the center of an iron bar five inches square, and plugging the ends; then fill this stout boiler full of water, and heat the boiler and the water all red hot, and let a little red hot steam out when something was to be made to go, and things went, too, when Perkins wanted them to, and some things went he wanted to stay, his lubricating oil, for one, because the steam was hot enough to burn it up, same as the cylinder-fired motors burn the cylinder lubrication to-day. In fact, it seems quite likely that Jacob Perkins would feel rather at home with one of our modern four-cylinder car motors, which are often hot enough to be seen in the dark.

Later, another American went over to England with another red-hot boiler, this onewith no water at all in it, and when steam was wanted, a pump was made to force a little water into the red-hot dry boiler; this was the beginning of the true "Flash" boiler that Serpolette, of Paris, has worked to the limit in road wagon driving. Stanley Brothers, of Newton, Mass., the first makers of steam wagons to actually succeed in picking out the plums from the pies and puddings of their predecessors to such an extent as to produce a really desirable spry little steam wagon, patented another kind of a "dry" boiler, made of a shell filled with a composition, no one knows exactly what, which would take heat and hold it and give it up, and run small tubes through this mass of hotness in the inside of the "boiler," or tank, full of hot something, and pump some water into the little tubes when steam was wanted. Stanley Brothers thought this was a good scheme at one time, but they don't seem to use it in their wagons now.

There were many other busy students of steam boilers in the early days, all looking for light-weight boilers to make a lot of steam, same as they are to-day, and they found out that the water should be divided up into small diameters or thin sheets, and that there must be free ways for the water to circulate in, and that this circulation was naturally from below upward. They found out, too, that steam must be made to pass rapidly over all heated boiler surfaces not having water on one side, and then stopped finding out things, because there is no more to learn than those few simple things about boiler designing.

As to the blowing up of boilers, such as are now mainly used for road wagons, there is no such thing known. Stanley Brothers put one of their boilers in a pit, and connected it up to a gauge, and gave it a lot of fire. The gauge went up to 1,200 pounds to the inch, and then the boiler began to leak between the head flange rivets, and the gauge finally stood still at between 1,300 and 1,400 pounds with steam in plenty coming out of the mouth of the pit that held the boiler. The fire was shut off, and after the boiler cooled down, it was taken to the testing bench, and found tight against 600 pounds water pressure, and put into a Stanley wagon and sent to a purchaser, and never was heard from again. We may safely accept the little steam boiler, so far as damage from steam explosions goes.

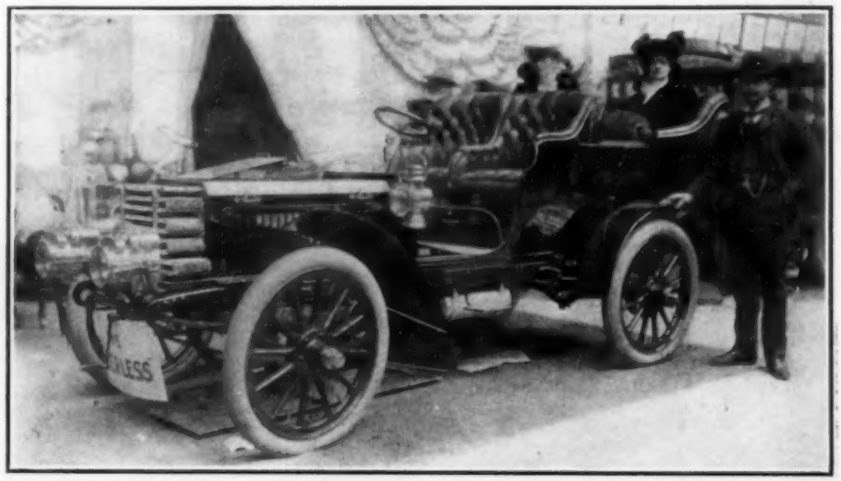
Comfort in New Cars at the Show.

In contradistinction to all previous shows that of last week in Madison Square Garden was noteworthy for a general display of the chassis, or underbody. This tendency on the part of so many makers to furnish buyers and the public with an opportunity to study construction was so much a revelation that the novelty of the thing had a tendency to distract the attention from "upper works," or body proper. This display of running gears and motor and acessory fixtures showed a great advance in their construction all along the line, but no more so than were the improvements looking to the comfort of the users of automobiles.

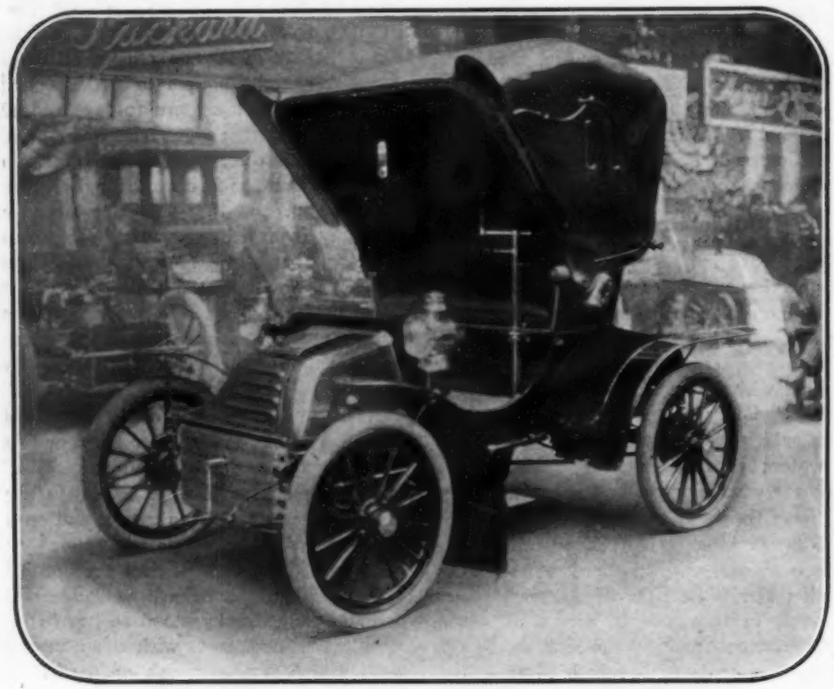
In every direction there was evidence that not only had the automobile been improved as a power plant, but as a conveyance furnishing traveling comfort not to say luxury.

There has been one justifiable criticism heretofore that the automobile was so designed that it was too much a fair weather vehicle. This criticism has not been overlooked as was proved by the many makers who have met it by exhibiting touring cars with tops and storm fronts. Where the vehicle was designed more on the depot wagon or party bus plan the sides and back were finished in glass panels. For the, strictly speaking, touring car, however, the glass front screen was retained but the utility to keep the dust and rain away from the contents.

This storing of the baggage on the roof in place of in the tonneau, as heretofore, naturally leads to a consideration of the rear seats. This part of the body has been made roomier in all directions. The entering doors have been made wider and once inside there is more general comfort. The seats have been made larger and the knee space more ample. By extending the rear



PEERLESS CAR WITH LONG WHEEL BASE AND HIGH BACKED SEATS.



AUTOCAR WITH VICTORIA TOP FOR BAD WEATHER.

sides and backs were provided with roll curtains. In connection with this type were the railings on the roof for confining luggage baskets, although it must be said of some of these flat baskets shown they were designed more for appearance than real sidewise the rear occupants not only face in a more forward position but their front view is not cut off by being obliged to sit directly back of those occupying the front seats. The backs, too, have been carried higher and the sides raised in proportion. The first gives better support in long rides and the latter keeps out the dust in a measure not before known with the previously prevailing low rear sides to the tonneau. In many instances the greater fore and aft space is taken advantage of to hang a large pocket on the backs of the front seats.

The extending of the toneau seats has naturally been followed by a lengthened wheel base. The advantage of this in riding over "give and take" roads is obvious. In many instances this addition of several inches to length of the car has been followed by bringing the rear wheels relatively further back. Other items in this connection were to be noted in longer and flatter rear springs and in many instances tires of larger cross section, in a number of cases four-inch replacing three and a half inch.

Comfort improvements in the surroundings of the front seats were also to be found. The dash boards have been built higher and the slooping footboard has been given a more acute angle. This is a most desirable betterment for such vehicles particularly using foot control levers. While there has generally been an upward slope to the forward part of the footboard in too many instances the angle was not sharp enough to give a comfortable rest to the feet when they were idle. Breakdown or tilting steering wheels capable of being thrown forward on the post and out of the way of the operator in entering or leaving the car have been heretofore conspicuous in their use on a few makes. At the show they were extensively applied.

Studying a comfortable position for the driver one make of car stood conspicuously forth. In place of retaining the same line for the backs of both the divided front seats, the driver's seat had the back padded forward about two inches from a point extending upwardly from an approximate center. This was in recognition of the fact that the driver of a car leans rather forward in handling the steering wheel.

The comfort and convenience of the

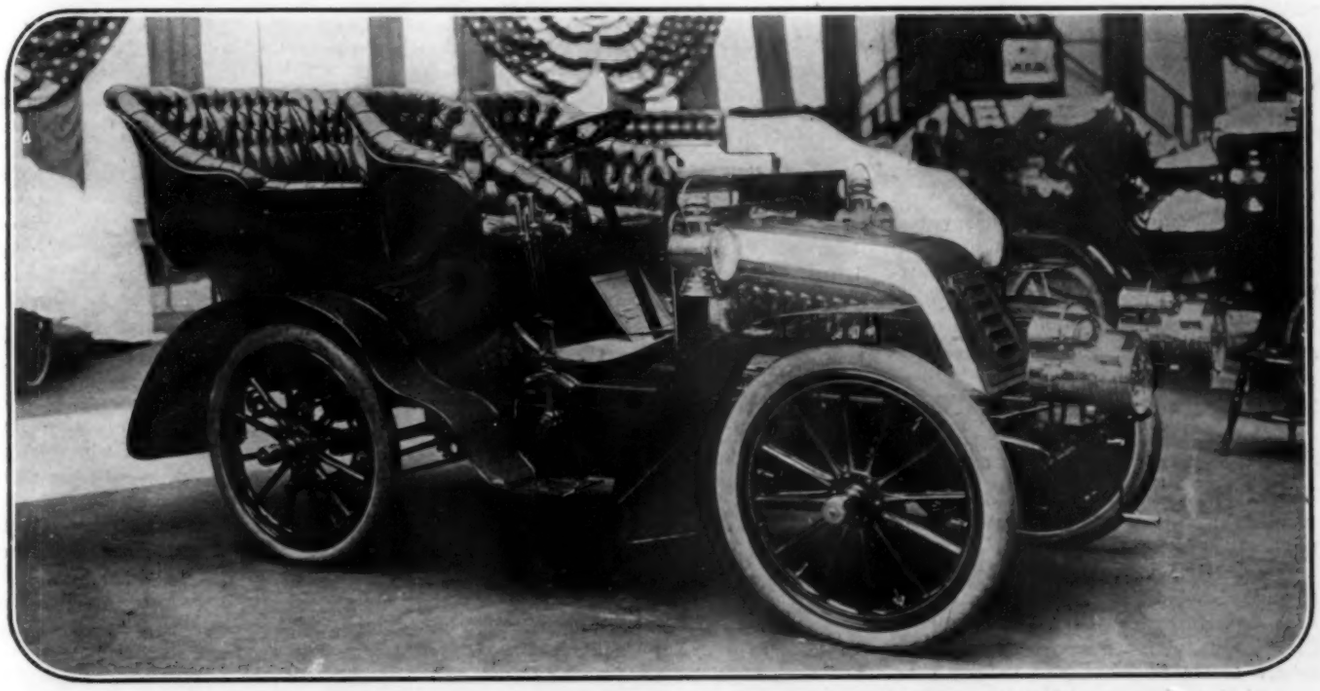
operator was also in evidence, in many instances, in the simplification and reduction of operating factors. There was better grouping of the controlling devices near the steering wheel, but something is yet left in not placing the motor speed governing devices in a position which would not require a removal of the hands from the wheel. A difficulty which has been recognized and remedied in the latest French design.

One item of comfort for winter riding that has frequently been commented upon as lacking attention, is still open to this criticism so far as any evidence presented by the show is concerned. That item is the use of either the exhaust of the gases or the hot water flow of the radiating circulation for keeping the feet warm in cold weather riding. The advantages are obvious, the means required to gain the end can be worked out in a simple manner yet no maker seems to have given the matter serious thought. At least nothing at the show impressed the observer to that conclusion.

The show proved that America is not only living up to its reputation as rapidly progressive mechanically, but that we of this country demand and are given the highest attention in our comfort and luxuries no matter where the application.

Business Transactions at the Show.

Like its immediate predecessor in Paris, the New York Show has appealed alike to the general public and to all who are directly or indirectly interested in the motor vehicle. The great public of New York and its suburbs which visited every exhibition at Madison Square Garden for mere recreation has this year seen the new vehicle in greater numbers, wider variety of types and more perfect form than ever before; and there is every evidence that the interests of motoring have been materially advanced by this popular demonstration. The would-be users of cars for pleasure or business, those who came in search of practical knowledge of the more elemental sort, have found much to instruct them in the very complete exhibits of stripped frames and separate parts, while the car exhibits as a whole go far to demonstrate that the practical everyday vehicle for both business and pleasure is at last an accomplished fact. The more expert, including many delegations of club members from Boston, Philadelphia and other cities, were amply repaid by the opportunity afforded for the thorough study of the newest details of design and construction.



LOCOMOBILE TOURING CAR, WITH HIGH BACKED AND LUXURIOUSLY UPHOLSTERED SEATS.

That the general interest is in no way superficial or transitory is shown by the volume of business transacted during the seven working days of the show. Apropos of the statement made by one maker at the meeting of the N. A. A. M. last week that the persons visiting a January show were sightseers rather than buyers, the general opinion seems to be that the present show was largely patronized by a very intelligent class of users and buyers. According to one careful estimate, the sales to individuals reached a total of nearly 900 cars.

While it is not possible to estimate the total business accurately in dollars and cents or in numbers of cars actually sold, there is every evidence that the most sanguine expectations of the makers have been exceeded and that practically all are more than satisfied with the result. So many statements have been made of sales well up in the thousands—in number of machines—that the more reliable and conservative makers are averse to giving definite figures, but all express themselves as fully satisfied with the week's work.

J. A. Kingman, of the Locomobile Company of America, stated that the public demand was for all classes, both steam and gasoline, and from the smaller runabouts up to the heavy touring cars; according to the purse and needs of each individual. The company's sales for one day during the show reached a total of $165,000. Mr. Kingman favored a little earlier date, as giving more time for completion and delivery, and a lengthening of the show to a full two weeks, making the work of the exhibitors less hurried and giving the public ample time to study the exhibits carefully.

The New York branch of the Winton Motor Carriage Co. had 59 orders on its books when the show opened and 90 orders on Saturday night, a total of 31 orders, all for the new car, booked in the seven days. The total sales of the Winton Company run between 125 and 150 cars. As the result of examinations of the cars, a number of possible purchasers are booked for further tests on the road.

The Searchmont Automobile Co. has sold the full product of its factory up to July 1, about 200 cars. The Wanamaker store, the New York agent for the Searchmont and

Rambler, sold $30,000 worth of the two makes. Banker Bros. through their New York branch made sales of eight of the new Peerless cars, three Waverleys and one Pierce, amounting to $31,000 in all. The Philadelphia branch sold three of the four-cylinder Peerless, five of the two-cylinder, eight Knoxmobiles, five Autocars, and three Waverleys. The Oldsmobile Company declined to give any figures of sales but stated that the show was perfectly satisfactory from the selling standpoint. The White Sewing Machine Co. made a similar statement.

C. R. Mabley, of Smith & Mabley, stated that the sales at the show would include from 15 to 18 cars, valued at about $100,000. Grout Bros. expect to build 25 of the new steam tonneau, all being sold. The Central Automobile Company declined to give any figures as to sales, but stated that the business of the week was in itself most satisfactory, while it promised to result in further sales. The Electric Vehicle Company had no complete figures of sales, but considered the show a success both as an evidence of progress and of general interest in the motor car and from the attendance of bona fide purchasers.

In the line of commercial vehicles alone, the Vehicle Equipment Company reports very heavy sales, including 38 heavy trucks of a total value of $123,000. Three were sold to the National Biscuit Company, two to Montgomery Ward & Co., Chicago; two to the Ohio & Pittsburgh Milk Co., Pittsburgh; one each to the Seeley Mfg. Company, of New York; Austin, Nichols & Co., New York, and Peter Hermes, Pittsburgh. Of the electric carriages 22 were sold to Geo. W. Perkins, R. A. C. Smith, Stanford White, J. H. Flagler, C. E. Sherin and others, the total value being $74,800.

This company also handles the Berg gasoline car and the Neftel electro-gasoline car; of the former 21 were sold, in two sizes, the value being $78,300; and of the latter 11 were sold, valued at $40,700. This makes a total of 92 vehicles of an aggregate value of $316,000.

AUTOMOTOR 18-HORSEPOWER TONNEAU.

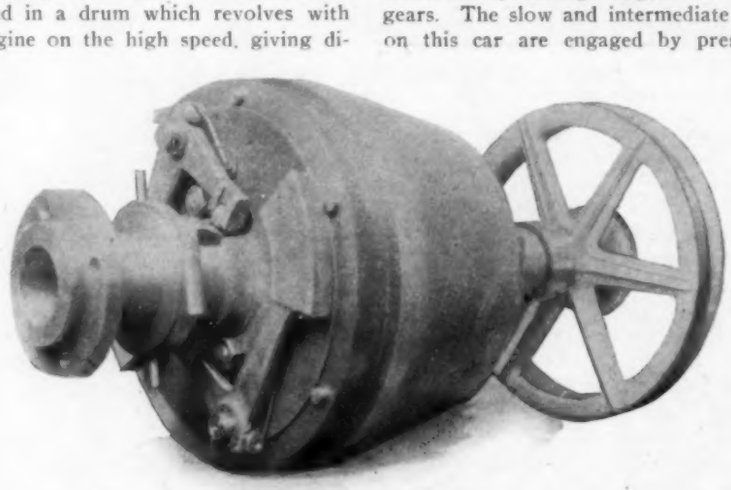
New Features in Construction.

(*Continued from Page 135*)

it is, is cleverly worked out; and the workmanship in general on these cars was certainly second to that of no other U. S. car.

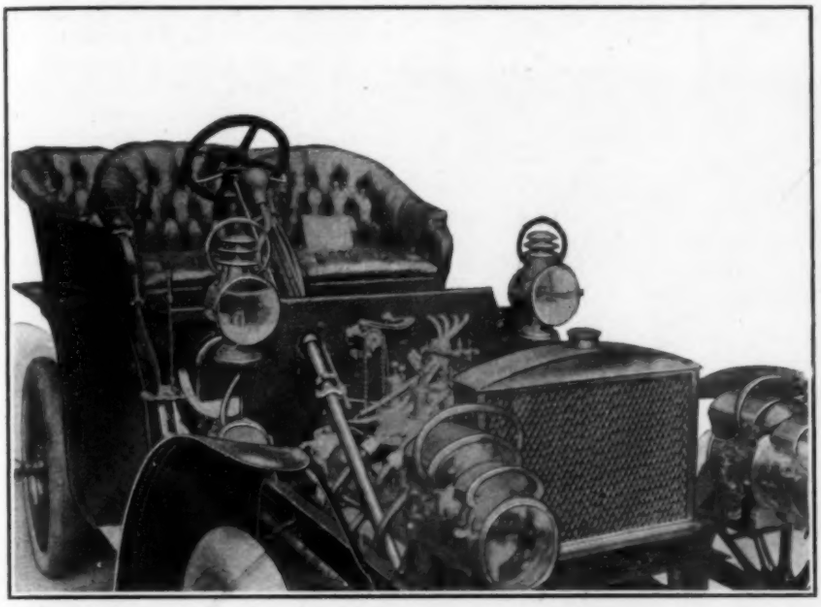
The Electric Vehicle Co., which seems to have abandoned its Mark VIII gasoline runabout, showed a heavy touring car of French type, with a four-cylinder 20-horse power motor in front and sliding gear transmission. There are four speeds forward, with the unusual feature in a four speed gear of direct drive on the high speed. A most attractive feature of this car was that all the spark plugs, inlet valve cages, and also the cover over the carbureter needle valve, were provided with 1-4 turn or 1-2 turn threads, like the breech blocks of artillery, so that a fraction of a turn sufficed to remove them for inspection. The inlet valves of this engine were very large, with a lift not exceeding 1-16 of an inch. A single lever working on the "selective system" in an H-slotted plate, on the system first used abroad in the Mercedes car and in this country in the Packard, operated all four speeds and reverse.

Perhaps the best combination of French exterior and purely original transmission features is shown in the Automotor, made in Springfield, Mass. In the latest model of this machine the speed changing mechanism, which gives three forward speeds and one reverse, is enclosed in a drum which revolves with the engine on the high speed, giving direct drive to a bevel gear on the live rear axle. The clutch, which is the most unique feature of the transmission, engages by centrifugal force. Two diametrically opposite weights, hinged on a disk which revolves with the engine, actuate an expanding split ring inside a drum, and are disengaged by wedges on the shaft operated by a foot pedal. The advantage claimed for this clutch is that it will automatically release itself when the engine is overloaded, as the engine will slow down before it will stop to a point where the centrifugal force of the weights is insufficient to make the clutch grip. Under such conditions the clutch will slip more or less, and it is claimed that hills which would otherwise be impracticable with the ratios of gearing provided may be climbed with this clutch. It is stated that with a little experience the operator can readily tell when the clutch is slipping, so that he is not in danger of allowing this to occur unnecessarily through neglect to change gears. The slow and intermediate speeds on this car are engaged by pressing a



AUTOMOTOR TRANSMISSION DEVICE, WITH CENTRIFUGALLY OPERATED CLUTCH.

pedal which tightens a band around the drum aforesaid, while simultaneously the change in the gears themselves is made by a lever. The designer of this car, Mr. Hinsdale Smith, states that this car, which is rated at 18 horse power, is so geared that the slow speed is used only under extraordinary conditions, and all ordinary running is done on the high gear, with occasional use of the intermediate. The car has elliptic front and platform rear springs, giving a degree of flexibility not shared by most machines of the "French type" at the show. Its steering gear has an irreversible mechanism in the handwheel itself,



NOVEL STEERING MECHANISM OF THE AUTOMOTOR.

instead of at the base of the steering column, and the column is raked to an extreme angle, giving a direct cross connection from its base to the transverse link connecting the steering knuckles, at a point near the left-hand end. Thus the springing and yielding of the front axle, inevitable with full elliptic springs and no reach rods, is absorbed by the torsion of the long 7-8-inch shaft in the steering column, and is claimed not to affect the steering. The water tank of this machine, by the way, was incorrectly stated last week to have "water legs" connecting the top and bottom of the tank. In place of water legs, it has ribbed castings, as the photograph clearly shows.

Among other features a little out of the ordinary may be mentioned that of the Warwick car, in which a De Dion motor and three speed individual clutch transmission are swung in a sort of cradle inside the body, with a very short chain and distance rod to the rear axle.

The roller clutch transmission of the Union motor truck was certainly the most unconventional thing at the Show. It consists of a set of three roller ratchets, somewhat like those of a bicycle coaster brake, carried side by side on the rear axle, and worked one after the other by link connections from the engine crank pin, which has a variable throw. A year ago this machine had two links instead of three, but the theoretical objection to the arrangement that the rapidity of the crank pin's motion in the direction of the pull varies at each stroke from zero to a maximum and back again to zero, giving a jerky pull which could hardly fail to wear out the clutch rather rapidly, is somewhat mitigated with three. Whether the device will prove commercially successful can perhaps best be decided by the test of time. The makers claim that the wearing surfaces of the clutch will last for two years of ordinary service. It is rather unfortunate that the application of this principle necessitates carrying the engine, which is quite heavy, on the running gear, with nothing better than rubber pads to save it and the axles from shocks.

In the matter of regulation nearly all machines of the French type used the French type of governor, which in general acts on the throttle valve or valves, and is assisted by a supplemental spring, whose tension is under the operator's control, so that increasing this tension causes the governor to act earlier and the engine to run slower; and which may be put out of action altogether by an accelerator pedal adjacent to the brake pedal. In most machines, two entirely separate connections are used for this purpose, but in the new Panhard machine, of which a châssis was exhibited by Smith & Mabley, the two functions are cleverly combined in one mechanism. The hand lever for retardation, instead of taking the form of a short handle on the steering column, is about 10 or 12 inches long, and is attached directly to the accelerator pedal, so that the two move together. In the upper half of their motion they work over a saw-toothed sector, by which the degree of retardation may be regulated. This motion is accomplished by hand. In the lower half of their motion they work without restraint, and are returned by a spring to the bottom of the sector as soon as the operator's foot is removed. This accomplishes the acceleration. Although the retardation cannot be effected in the first instance by the foot, the operator can by a pressure of his foot bring the pedal into the accelerating position from any point on the notched sector. The effect of these motions on the governor is seen in Fig. 1. The rod *A* is connected to the pedal aforesaid, and is shown in its neutral position with the pedal at the bottom of the sector. As the governor balls expand, *B* is carried in the direction of the arrow and the throttle is closed. To retard the engine, *A* is moved so that its coiled spring assists the governor, as it were; and to accelerate it is moved in the contrary direction, arresting the motion of *B* at any point determined by the position of the pedals.

Another governor out of the ordinary, less simple, but even more attractive in its

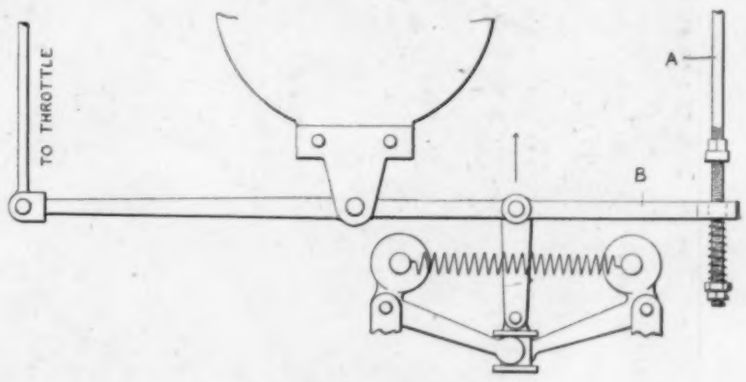


Fig. 1—THE NEW PANHARD GOVERNOR.

method of operation, was shown on the Berg machine, and is illustrated in Fig. 2. Here *A* indicates the connection of the governor, which acts in the direction of the arrow on the expansion of the governor balls. Spring *B* is not normally com-

pressed, and the throttle at *C* moves with the motion of the long arm *D*, which moves freely on the rod *E*. To retard, rod *E* is drawn in the direction of the arrow, so that it puts a definite limit to the amount of opening of the throttle valve. This rod is worked by a small handle on the steering column. To accelerate, a pedal is pressed, drawing rod *F* in the direction of its arrow. This, acting through lever *G*, holds the throttle valve wide open in spite of the action of the governor, which now compresses spring *B* without effect on the valve. On withdrawing the foot the previous conditions are automatically restored. This device should be especially useful when maneuvering in traffic, when normally it is desirable to have the engine somewhat throttled, but when a sudden spurt to get past another vehicle may at any moment be required. Under such circumstances the operator is apt to want both hands on the steering wheel, and the ability to accelerate and retard the engine at will, as well as to engage and release the clutch, by the use of the feet alone, is very convenient.

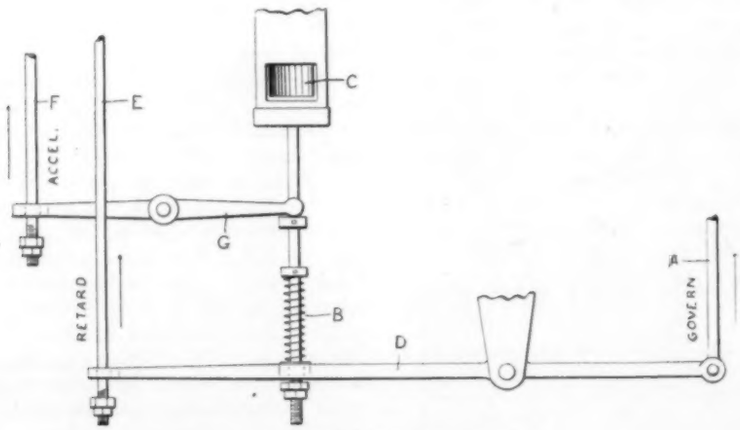
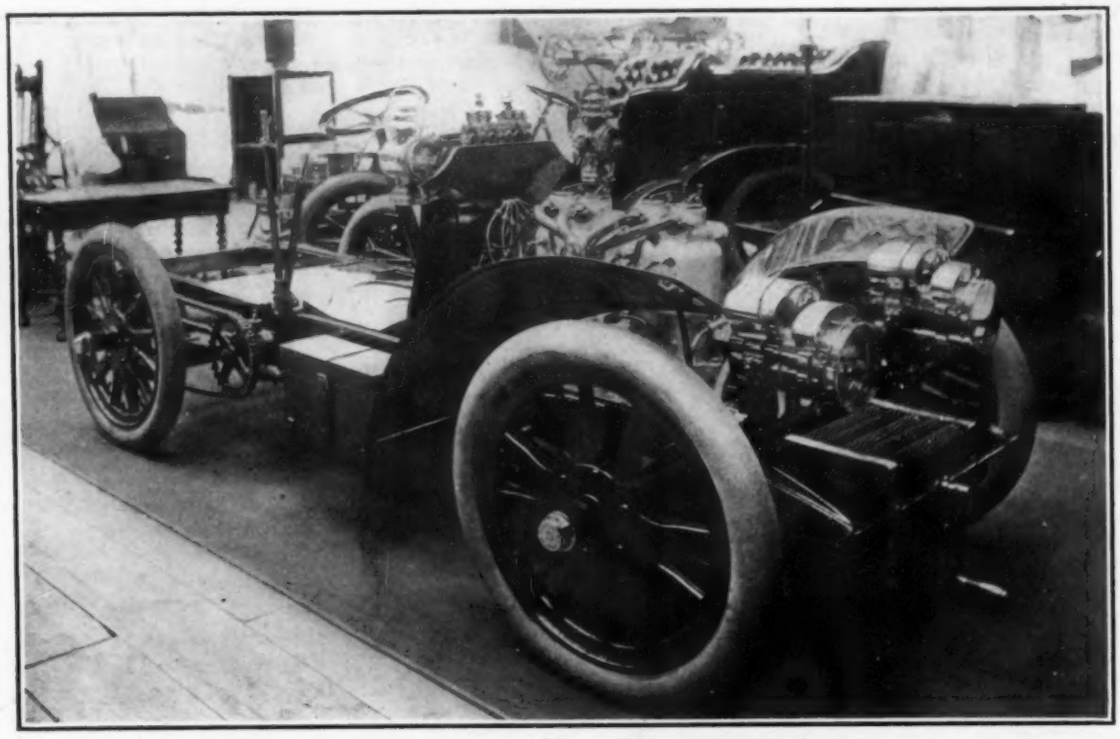


Fig. 2—THE BERG GOVERNOR.

An air dashpot was noticed on one of the Peerless engines in connection with the governor lever, obviously for the purpose of preventing the "hunting" of the governor frequently noticed in throttle-governed engines.

The Berg machines, although superficially a copy of the Panhard, contained a number of other features calculated to please the eye of the engineer. Notable among these was the steering gear, which was neither worm and segment nor screw and nut, but better than either. The lower end of the steering column carried a square-threaded screw, which turned in a steel nut having a rack cut on one face. This rack worked in a gear segment on one arm of a bell crank similar to that ordinarily used. The purpose of the arrangement, which it admirably fulfilled, was to provide ample surface to take up wear. The bell crank just mentioned hinged on an eccentric pin, by turning which some of the wear between the rack-teeth and segment could be taken up. Another feature which could not fail to appeal to the chauffeur was the arrangement of the gasoline tank, which divided by a partition into two compartments, the smaller holding about 2 gallons. These compartments were connected below by a pipe with a cock, and at the top by a 1-4-inch space above the partition. Thus on filling the tank both compartments would be filled, but as the gasoline is drawn only from the larger compartment, that will be empty first, giving the chauffeur due warning before his supply is exhausted. A novel form of current distributer was also noticed on this engine. Instead of four fixed brushes and a commutator with one segment, there was but one brush, and this rotated with the shaft and bore outward against the internal surface of a fiber ring, in which were fixed four metal segments connected to the four cylinders. The ring could be rotated as desired to advance the spark, and the whole was covered by a dust cap.

The radiators of these Berg machines had small tubes and elongated fins of the new Panhard style, as described in these pages last week, but, instead of the tubes being continuous from top to bottom of the coil and bent zigzag back and forth, they were short and straight, and their



CHASSIS OF THE PAN-AM, WITH TWO-CHAIN SIDE DRIVE.

ends were soldered into cast brass headers, one on each side. These headers were partitioned internally so as to cause the water to pass in series through the tubes from top to bottom (though, of course, in multiple so far as the several associated tubes in one horizontal plane were concerned), and were provided with ribbed covers which could be removed by taking out a few screws. The purpose of this was to make it possible to clean out the radiator tubes of sediment or calcareous deposit, and it appeared to be a particularly commendable feature.

In the midst of so many evidences of correct design and careful workmanship as were to be seen in these Berg machines, the writer was a little surprised to find a connecting rod with oil grooves in the upper crank pin brass, where most of the pressure comes, as well as in the lower brass. Doubtless the same mistaken practice might have been found in many others of the machines at the Show, and it therefore seems worth while to point out, what is a matter of common knowledge among steam engineers who have studied the subject, that any recess or indentation in a bearing surface where pressure comes, simply affords the oil an opportunity to be squeezed out of the bearing surface into that recess. The film of oil between the rubbing surfaces depends upon its own cohesion, aided by capillary attraction, to hold it in place against the pressure tending to squeeze it out. Consequently the oil itself is under pressure, and this pressure is at a maximum in the center of the bearing surface and diminishes to nothing at the edges. Unless the oil be pumped into the oil grooves under a pressure exceeding the normal pressure of the film of oil itself, it will simply squeeze out through these grooves, and the pressure of the film of oil all around the groove will be reduced. Consequently any such grooves are detrimental to an extent much greater than would be measured simply by the relative surface which they take out from the bearing. A shaft freely supplied with oil on that side of the bearing opposite to the pressure will always carry it around by capillary action, and no other provision is then needed than to supply the oil in ample quantities. Where the splash system of lubrication is used, much the best way to accomplish this is to make holes, or, better still, affix oil scoops to the connecting rod cap, through which oil will be dashed upward into oil pockets in the lower brass.

It is, indeed, a matter of some astonishment to see how slight attention is paid even now to the lubrication of most motors. Oil in abundance is provided in the crank case, but the provision for getting it to the points where alone it will do good are often pitiably inadequate. Instead of deep oil pockets packed with waste, in the covers over the crank shaft bearings, we often find merely a 1-4-inch hole, to which the oil may not find its way for some time after the engine has been running, and which under the most favorable circumstances is hardly sufficient for the abundant flow of oil essential to long life of the bearing. The ideal condition for bearings of this sort is not simply a meager allowance fed to the bearing and allowed to work out whither it will, but a copious and constant flow, supplied at the top of the bearing and working out at both ends, with an oil flange and a return duct for the oil which reaches the outer end. Without some such provision as this, planned to supply both shaft and crank pin bearings with abundant oil, the most liberally designed bearings will go to pieces in a short time and require constant repairs.

Perhaps the most satisfactory sight at the Show from this point of view, was a two-cylinder 12-horse power De Dion motor at the George N. Pierce Company's stand. This motor has a small oil pump at the bottom of the crank case which forced oil continuously upward to a reservoir at the top of the engine, from which it flows downward to all bearings.

EXHIBIT OF BAKER ELECTRIC STANHOPES AND RUNABOUTS.

Banquet of the National Association.

While the show may be said to have been an exclusively business affair, the social side of the industry was manifested by various dinners given by the trade during show week. That most largely attended was the annual banquet of the National Association of Automobile Manufacturers held at the Waldorf-Astoria January 23. One of the grand banquet halls was arranged with small tables, on which the soft light of shaded candles outlined the exquisite flower-decorated settings. At these tables were grouped men from all points of the industrial compass, many identified with the industry since its beginning and more who have been gathered into its current in the progress of later days. They were all of one mind, however, and that was to enjoy the occasion, and if the lateness of the hour at which the last groups left the hall is any indication the banquet was the most attractive feature of show week.

Winthrop E. Scarritt was toastmaster, and to aid him in keeping the feast of reason was the Hon. Jacob A. Cantor, Borough President, who spoke on "The City of New York."

F. L. Smith was billed to tell "How to Sell an Automobile," and T. C. Martin to discuss "Electrical Matters Pertaining to Automobiles," while the Hon. John S. Wise made the hit of the evening by avoiding his subject, "What Lawyers Hope For from Automobiles," and poking fun at the other speakers.

In introducing the first speaker—Jacob A. Cantor—as one of the pioneers of the good roads movement in this State, Mr. Scarritt discussed the possibilities of the future.

"What would it mean if all the horses in the streets of New York could be instantly removed?" he queried. "It would double the width of your streets. Suppose that these now horse-drawn vehicles were replaced with horseless vehicles. It takes a horse-drawn truck forty minutes to drive from Battery Park to 42d Street. With a motor car it would carry double the load and go to 42d Street in half the time,thus removing all the vehicles from the streets one-half the time. The dreams of yesterday are the realities of to-day."

Mr. Cantor made some witty references to the suggestions of the toastmaster and in more serious vein said:

"The bicycle man was the first to suggest to any considerable extent the subject of good roads in this State. (Applause.) In 1886—and you will pardon me for a very brief biographical sketch of myself—I introduced in the Assembly of the State what was known as the 'Liberty Bill,' which gave the right to the bicyclists of this State to use the highways. And, although I do not look like a dude, nor do I ride a bicycle, I was denounced as being a representative of a lot of fadists and dudes and dudines, and so we had to fight along on that line, and that started the subject of good roadmaking in this State. You gentlemen have accomplished it. Your influence has been more potential than theirs was, and by your ingenuity, your great financial ability and the following that you are able to muster, you have inaugurated in this State and in this country 'good roads,' a movement that will not end until the whole country wherever it is traveled by man or beast or automobile will have a good, substantially made surface road. (Applause.) You have done much for this city. I regret to talk about the dead—when I speak of the dead, I mean the last administration (great laughter and applause)—but candor compels me to say that the pavements were not in that most exquisite condition that skilled automobilists, or in any other capacity, could travel with safety or comfort; and so, after Shattuck and Seligman and Roy Stone and some other fellows had prodded me for a day or two, I made up my mind the first thing we had to do for New York was to give it good pavements (applause), and I have done it at considerable expense, but the money was accurately and conscientiously expended."

When his turn came Mr. Smith confessed that he had asked permission of the toastmaster to change the title of his remarks to read "How to Sell the Public" instead of "How to Sell a Machine." To this Mr. Scarritt had responded, "No, there is no objection whatever, but considering the crowd present there is no damn use." Looking over the diners from his elevated position at the speaker's table, Mr. Smith expressed his belief that a great many of the sellers of automobiles had brought their customers with them. One way to sell a machine would be to sneak over to the show while the various representatives of rival makes were busy in the banquet hall.

"There is still another way to sell an automobile. The burden of my remarks to-night, which will be ended in about one minute, will be confined to the general doctrine of 'stick together and don't knock.' (Applause.) The business has been chaotic and a few of us have a great deal to learn, and all of us have something to learn. The gradation of the amount of learning can be applied each one to himself as you sit around the tables to-night. The great doctrine of not knocking is perhaps not understood by all the manufacturers present, but it might be likened somewhat to the friendly warning you would give to a man who first tackled the business end of a mule, which would be in brief—'Don't monkey with that end, unless you know all about it.'"

Mr. Martin struck a mournful note in discussing the topic set against his name, though he quoted a manufacturer present who had predicted that 10 years hence the horse would be absent from the streets of New York and 75 per cent. of the vehicles then in use would be electrically driven.

When the orchestra had ceased playing "Dixie" and the stirring cheers of the diners had quieted down, the Hon. John S. Wise, who was accused of having sat for the artist who decorated the menu cover, was heard.

"I came here last night and remained here this morning," he began, "and as it is always a pleasure to see young, active, live people engaging in a great new enterprise, you are to-day interested in what will be a wonderful development among the many demands of our marvelous civilization. I remember when I came to New York some fourteen years ago sitting at the table with a very distinguished man who has since gone to his rest and predicting to him that within ten years the use of horses in the city of New York upon the car lines would almost be entirely dispensed with. He laughed and said that I was overhopeful because of my connections with the electric railway lines; but the last time I met him he admitted that my prediction had been nearly verified.

"Now this automobile business of yours is certainly most interesting and most absorbing. You have the advantage, too, of being impressed with its utility and its delights to people who are able to indulge in

COVER OF BANQUET MENU CARD.

the pleasures which you hold out to them. You do not want any 'wine appetite with beer incomes' in your business. (Great laughter and applause.) We common people will get along after while. I remember several years ago talking with my friend Leonard and he predicted that the bicycle was coming down, and I have lived and hoped that the automobile was coming down; but I have spent two or three hours talking with Leonard and the more I talk the more it looks to me as if it was going up. Nevertheless, after the millionaires get through with it we will buy the second-hand ones and have a good time ourselves. (Laughter.)

"I am here to learn something about automobiles, because most of the friends from whom I expected to get information are buried. (Laughter.) They started out in an automobile, they came home in an ambulance. They have either gone up the side of the mountain and turned somewhere else or over the side of causeways of a railroad. The reason is they were learning a little too rapidly and the chauffeur got jealous and let them work it alone. Those things will regulate themselves by the survival of the fittest.

"I do not believe that the best has been attained in anything. I have lived in a time when within the period of my own life I have witnessed such marvelous developments, such wonderful alterations in all the mechanism of life that if the story of our own day could have been epitomized and placed in the hands of the children of 100 years ago they would have read it as the most marvelous fairy tale that could ever have been told to credulous childhood. I live in the belief that even the wonders of to-day will pale into utter insignificance with the developments of the next century, and that we will all be put down, as we put down our ancestors, as slow old fogies in the wonderful times that are to come."

When the regular program was completed there was a unanimous call for Alexander Winton to speak about the Gordon Bennett race. Winton asked to be excused, not being a speaker, and said he hoped to be able to bring the cup across—"I hope an American will bring it back."

Automobile Club Members Dine.

A novelty in after-dinner entertainment was sprung on the members of the Automobile Club of America and their guests on the occasion of the fourth annual dinner held at the Waldorf-Astoria last Saturday night. Between speeches a smart electric runabout came into the great banquet hall at a rate of speed that would have given a county constable palpitation of the heart. Dashing around the scattered tables and down the main aisle, it stopped gently and noiselessly in front of the speakers' row. The driver, with goggles and mask, jumped out and the other occupant, Will Carleton, disguised as the humorous philosopher, Mr. Dooley, stood up and faced the expectant diners. He sang a topical song to the music of "Mr. Dooley," and with a wave of a Mother Gamp umbrella started the diners in a melodious chorus that ran:

Oh! Mr. Dooley, Oh! Mr. Dooley
The swiftest man the country ever knew;
He's *auto*-cratic, yet democratic,
Is Mr. Dooley—ooley—ooley—oo.

It was an electric success, and started a wave of pleasantness that reached out in a Marconi penetrability over all the hall.

No pleasanter occasion has, perhaps, ever brought the motorists of America's representative body together. The guests included a considerable gathering of notable "outsiders" and foreigners who had come to see the show and remained to dine as guests of the club.

About 300 sat down to the beautifully decorated tables of a size that permitted general conversation among groups of common interests.

President Albert R. Shattuck had with him at the speaker's table Winthrop E. Scarritt, Elliott C. Lee, Willard A. Smith, Simeon Ford, Colonel Albert A. Pope, Colonel John Jacob Astor, the Hon. W.

CHASSIS OF LONG DISTANCE CAR, MOUNTED FOR DEMONSTRATION PURPOSES.

W. Armstrong, the Hon. Theodore F. Kluttz, president: the Hon. J. P. Allds, W. Pierrepont White, Job E. Hedges, the Hon. Edward A. Bond, Charles E. Adams, J. A. Ockerson and W. T. Carleton.

In his opening talk the president referred to the good roads movement, and said that New York's share in the $20,000,000 road appropriation bill introduced into Congress would be $2,000,000 on condition that the State made an equal appropriation. The Federal bill would provide about 5,000 miles of good roads in the United States.

State Senator W. W. Armstrong, of Rochester, told about the good roads movement in which he was one of the original promoters, and caused a hearty laugh by saying that the only automobile he owned was made of tin.

Simeon Ford, of New York, who is an enthusiastic motorist, and who is also a never failing source of delight to the diner out, said he had read in one of the dailies that he was expected to "touch lightly upon the automobile." "I don't know why it was assumed that we would touch lightly upon the automobile," he said. "The honorable speaker, Job Hedges, being a lawyer, would, noaturally, 'touch' anything he came in contact with, but, not necessarily, lightly. I, being a hotel-keeper, get touched by the public right along, but do very little touching myself. My business is melancholy, but not touching. I would much rather touch lightly on the automobile, however, than have the automobile touch lightly on me. And that's no joke!

"Our streets have always been hard enough to navigate, heaven knows, but nowadays with the electric trolleys and the automobiles added, pedestrianism has degenerated into a mere succession of frenzied leaps and convulsive stops, and our progress to and fro is like that of the startled fawn, which

Bounds from crag to crag,
Hearing the hunter's horn.

"Shakespeare, who was up to date and a little ahead of it, said:

"'No man means evil but the devil, and we shall know him by his horns.'

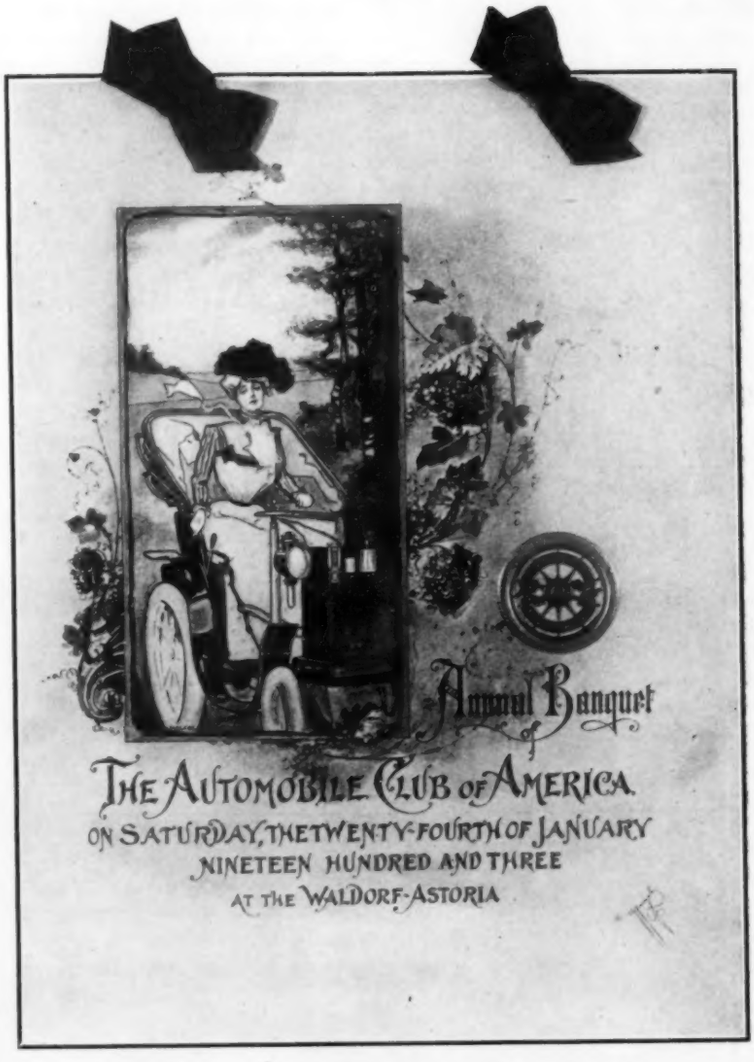
"This eternal horn blowing is a nuisance and a nerve-destroying crime, and is unnecessary and silly. I have noticed that the smaller the auto the bigger the horn. To hear one of these little tin washboilers, with a 1-horse power engine and a 12-horse power horn and a 20-mule power driver, coming down the avenue you'd suppose that Gabriel with his trump had broken loose at last, and when you look up, expecting to see a trump, you see nothing but a two-spot.

"I don't claim that every man who runs an auto is a jackass, but I do claim that every jackass runs an auto. I run one myself. The first machine I looked at was small, simple and inexpensive. It had but one cylinder. The salesman said that was an advantage. He said a four-cylinder engine would get out of order four times as often. This machine had a handle on the side like a barrel-organ. He showed me how to make it go fast and slow and stop and start, and all the while the machine stood in the store. A child of 10 years could run it, he said. 'Now, if you want to get out of a tight place,' he said, 'get a sudden move on—you touch this lever called the accelerator.' He touched it and with that something went wrong and the handle I have alluded to flew around and smote him violently in the abdomen. When he came to I told him a child of 10 might run the machine all right, but the child would have to have a very strong stomach.

"The consensus of opinion seemed to be that a gasoline machine was the thing. There was power simple and direct! It ran by a series of explosions. That appealed to me at once. That's the way my hotel on Park avenue has been run during the past year—by a series of explosions of dynamite by the tunnel people, and a series of explosions of profanity on the part of myself and my few remaining boarders. Every auto I thought of buying all my friends assured me was no good and in the light of subsequent experiences I guess they were right. Finally, on my own responsibility, I bought that lovely lobster-pink creation in which I may be seen most any pleasant day now running merrily through the park or street and anon sitting reposefully while my chauffeur, assisted by the populace, explores the vitals of the machine, looking for trouble.

"I remember when I was a boy I saw and admired at Barnum's Museum a working model of an engine, all made of glass, but I never dreamed I should own one. I am getting proud of my machine. I think it holds the record for having traveled fewer miles in a given time than any other yet devised. My engine will break when standing motionless on the barn floor, simply through the power of gravitation. It is operated by a skilled mechanic and costs me as much per month as it would to run the steam yacht *Corsair*. But it has one merit. I never wander so far from my own fireside but that I can easly walk back. I have worn out six sets of hinges in the hood peering at the engine to see what is busted.

"I used to get out and help the chauffeur to look, until one day when we were both



COVER OF A. C. A. ANNUAL BANQUET MENU CARD.

hidden behind the hood, a sneak carried off my fur robes. Now I just sit back and listen to the jeers of the populace and sigh to think of the happy times gone by when I used to travel on the street cars and get to my destination on the same day."

Job E. Hedges, of New York; General Roy Stone, and W. P. White also spoke of the automobile, good roads and other things appropriate to the festival. Then each diner reached for his souvenir, which was a papier maché silvered reproduction of the President's Cup in the Reliability Trials, and passed out with pleasant recollections of one of the most successful dinners of the season.

Those who sat at the speakers' table included:

Winthrop E. Scarritt, Elliott C. Lee, Willard A. Smith, Simeon Ford, Col. Albert A. Pope, Col. John Jacob Astor, Hon. W. W. Armstrong, Hon. Theodore F. Kluttz, Albert R. Shattuck, Hon. J. P. Allds, W. Pierrepont White, Job E. Hedges, Hon. Edward A. Bond, Charles E. Adams, J. A. Ockerson, W. T. Carleton.

Among the other guests and members present were the following:

Geo. B. Adams, Calvin T. Adams, M. D., H. W. Alden, Russel A. Alger, Jr., Franklin Allen, Bartlett Arkell, W. J. Arkell, Frank Armstrong, Geo. W. Arthur, A. E. Austin.

W. H. Baker, Wm. H. Barnard, Jules S. Bache, Geo. A. Banker, A. L. Banker, John A. Barhite, Clarence W. Barron, S. S. Battershall, W. G. Bee, Chas. K. Beekman, Ralph Beach, W. N. Beach, M. M. Belding, Jr., E. M. Belden, Hart O. Berg, E. T. Birdsall, Cortlandt F. Bishop, Gustav Bissing, Joseph A. Blair, Frederick G. Bourne, Joseph Boyer, George J. Bradley, Curtis P. Brady, Daniel M. Brady, H. Bartol Brazier, James L. Breese, Stewart M. Brice, Arthur Brisbane, E. E. Britton, Emerson Brooks, A. Vedder Brower, Dr. W. S. Brown, W. H. Browning, H. K. Browning, M. J. Budlong, Ralph Bullock, Col. C. E. Burke, S. M. Butler, Winslow E. Buzby.

Capt. Jas. E. Calhoun, Coleman Carnegie, Samuel Campbell, Hon. Jacob A. Cantor, Louis Caragol, J. Herbert Carpenter, Louis Cassier, Juan M. Ceballos, A. H. Chadbourne, George F. Chamberlin, A. Ward Chamberlin, Wade Chance, M. D. Chapman, A. Clement, Thos. B. Clarke, Charles T. Clifford, F. B. Cochran, Dr. G. D. Cochran, A. B. Cohu, Hon. Bird S. Coler, Roland R. Conklin, Harry Content, Samuel S. Conover, W. F. Cooper, Frederick K. Corning, Justus A. B. Cowles, Walter Cox, Henry C. Cryder, A. M. Cummings, Herman Cuntz, A. Curphey, S. W. Curtis, Chas. Gordon Curtis.

Arthur M. Davidson, Saml. T. Davis, Jr., Geo. H. Day, D. J. Densmore, J. L. de Saulles, H. E. Dick, Philip T. Dodge, H. T. Donaldson, C. S. Drummond, C. A. Duerr, George W. Dunham, Gano S. Dunn, M. L. Duplan, J. Franklin Dunseith, M. D., Frank W. Duryea, W. H. Duval, Col. P. S. Dyer.

Thomas A. Edison, Richard L. Edwards, Ernest Ehrmann, H. S. Elliott, Wm. D. Ellis, Hon. John E. Eustis, Frank Eveland, Harry Everall, Thomas Ewing.

Robert A. Fairbairn, Chas. H. Fancher, John H. Flagler, Henri Fournier.

Edward B. Gallaher, William D. Gash, Lucius T. Gibbs, C. H. Gillette, Chas. J. Glidden, Hon. John W. Goff, T. W. Goodridge, E. R. L. Gould, Robert Graves, R. A. Greene, William Guggenheim.

John P. Haines, Clarence M. Hamilton, William Hawley, Alan R. Hawley, Geo. Hays, Capt. Homer W. Hedge, J. B. Hedges, J. N. Henriques, Frank B. Herd, C. C. Hildebrand, J. M. Hill, John A. Hill, H. W. Hill, Thomas M. Hilliard, W. S. Hilles, Morris J. Hirsch, George Hoadley, J. H. Hoadley, W. R. Houghtaling, G. E. P. Howard, Geo. H. Howells.

E. Clarence Jones, Charles B. Judd.

H. S. Kerr, H. U. Kibbe, W. H. Kirkpatrick, L. H. Kittredge, Charles S. King, Walker H. Knight, C. E. Knoblauch, J. G. Kugelman.

Edouard Lamberjack, J. S. L'Amoreaux, Frederick M. Landé, A. B. Leach, William Leary, R. Lincoln Lippitt, C. Lithgow, F. T. F. Lovejoy, A. Lucas, Whitney Lyon.

R. G. Macdonald, J. M. Macdonald, V. Everit Macy, W. S. Mallory, Joseph J. Mandery, Dr. A. S. Marden, Hon. Isaac Marks, R. Masujima, C. W. Matheson, Hon. Armitage Mathews, Harry L. McGee, A. L. McMurtry, B. Stanwood Menken, Hon. Theo. Meyers, A. E. Miller, L. P. Mooers, W. J. Morgan, Dave H. Morris, Chas. W. Morse, Frank A. Munsey, Frank X. Mudd.

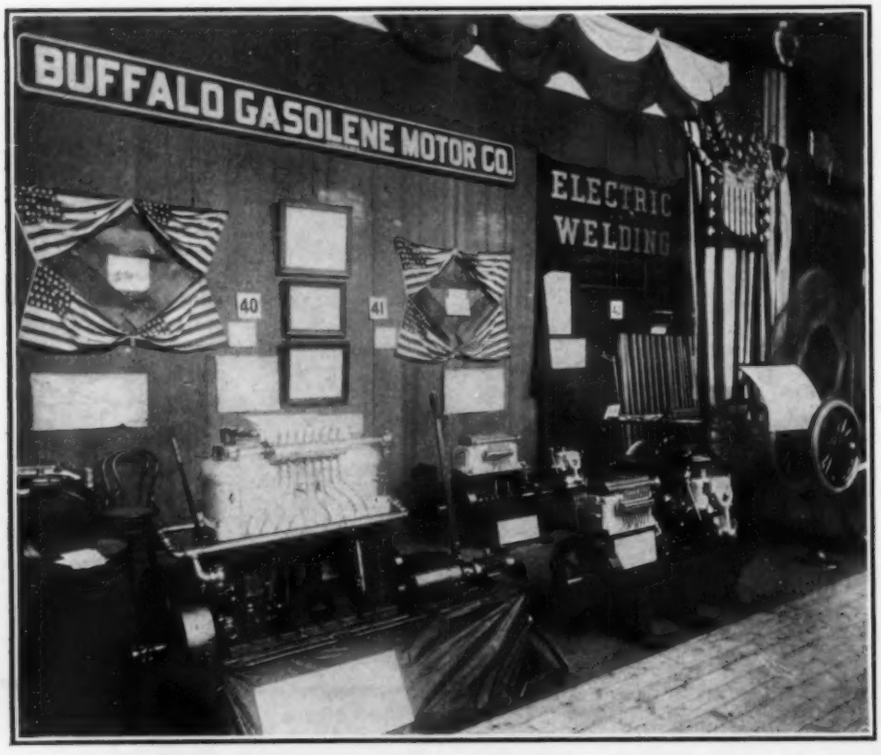
Carleton W. Nason, T. H. Newberry, Hon. Jos. E. Newburger, Arthur D. Newton, W. W. Niles, Eliot Norton, George F. Norton, E. H. Norton, W. P. Norton.

Hon. Joseph Oatman, Wm. B. Oliver, Jr.

THE YALE TONNEAU, BROUGHT OUT BY THE KIRK MFG. CO.

I. H. Page, O. M. Palmer, Col. K. C. Pardee, E. S. Partridge, Frank A. Pattison, Commander R. E. Peary, Will R. Pitman, Chas. W. Place, Henry W. Poor, J. M. Porter, Franklin Porter, F. D. Porter, Clarence A. Postley, H. Walter Pratt, Prof. M. I. Pupin.

E. Rabourdin, R. Bleeker Rathbone, Wm. C. Reick, W. I. Relf, Dane E. Rianhard, Isaac L. Rice, H. H. Rice, O. L. Richard, A. L. Richardson, A. L. Riker, W. J. Riker, Milton Roach, John T. Robinson, F. S Rook, Hon. S. W. Rosendale, Maurice Rothschild, A. W. Rossiter, Walter C. Runyon, E. W. Runyon, E. F. Russell.



BUFFALO MARINE MOTORS WITH CYLINDERS ENCASED IN ONE JACKET.

Henry Sanderson, G. L. Schiffer, H. G. Schiffer, R. P. Scott, C. B. Seeley, DeWitt J. Seligman, Jefferson Seligman, Charles Sherrill, Henry F. Shoemaker, Kenneth A. Skinner, Gen. George Moore Smith, Benjamin Smith, Richard Stearnes, Ed. J. Steiner, Isaac Stern, Edwin Sternberger, M. D., W. J. Stewart, Gen. Roy Stone, R. T. Streit, F. L. Swetland.

S. H. Valentine, Wm. C. Van Antwerp, Philip Van Volkenburgh, H. H. Vreeland.

John Brisben Walker David S. Walker, Justin C. Walker, Geo. S. Wallen, G. E. Warner, Oscar Warner, Barclay H. Warburton, Edwin H. Weatherbee, G. Weinberg, Geo. L. Weiss, E. F. Weston, Edward Weston, H. P. Wertheim, G. A. Wertheim, Dr. S. S. Wheeler, R. H. White, Windsor T. White, A. H. Whiting, Hon. Wm. R. Willcox, Alexander Winton, Jas. E. Woodbridge, Harry S. Woodworth, H. Rossiter Worthington, C. C. Worthington, C. G. Wridgway, J. M. Wright, J. E. Wyman.

SECOND ANNUAL MEETING OF NATIONAL ASSOCIATION.

COMMITTEE WILL MEET FEB. 5.

Election of New Board of Offices Will Then Take Place—President S. T. Davis Will Retire and Windsor T. White Will Probably Succeed Him Discussion on Various Timely Matters.

The second annual meeting of the National Association of Automobile Manufacturrers was held on Saturday morning in the small concert hall of the Garden. President S. T. Davis, Jr., was in the chair and about thirty members were present, the following companies and firms being represented: Ajax Motor Vehicle Co., Apperson Bros. Automobile Co., Automotor Co., Baker Motor Vehicle Co., Crest Manufacturing Co., Duryea Power Co., Electric Vehicle Co., General Automobile and Manufacturing Co., Thomas B. Jeffery & Co., Locomobile Co. of America, Mobile Co. of America, Olds Motor Works, Peerless Motor Car Co., George N. Pierce Co., Searchmont Automobile Co., Stearns Steam Carriage Co., Studebaker Bros. Manufacturing Co., Ward Leonard Electric Co., White Sewing Machine Co., Winton Motor Carriage Co., Woods Motor Vehicle Co.

President Davis read a lengthy report setting forth the growth and present condition of the Association, which is most prosperous; the gross receipts of the present show alone are estimated at $40,000 and after the expenses are deducted the Association will receive 30 per cent. of the balance, the Automobile Club of America receiving a like sum while the Garden receives 40 per cent. With the receipts from the Chicago show of next month the Association will be in possession of a surplus out of all proportion to its expenses, and it has been suggested that a part of this be returned to the members who have rented space at the shows.

The president called special attention to the coming exposition at St. Louis, and suggested that early provision be made for a fitting representation of the bicycle industry.

Treasurer Harry Unwin read a lengthy report of the Association's finances which, with the president's report, will be printed and sent to members.

Five members of the executive committee retire this year, Messrs. H. Ward Leonard, Windsor T. White, Lucius T. Gibbs, F. S. Fish and W. C. Baker. All but the latter were renominated, with I. A. Page for the vacant place, the secretary casting one vote.

The routine business disposed of, President Davis brought up the question of the most desirable date for the annual New York show, resulting in a very interesting discussion. C. E. Duryea briefly suggested September or October, while John Brisben Walker followed with a plea for a show in March, on the grounds that the chief use of a show was to interest the buying public and consequently the beginning of the outdoor season would be better than any time in mid-winter. Mr. Olds favored the present date, January, as did Messrs. Percy Owen, Goss, Clifton, Ward, Leonard and others, some of the points argued being that at this time makers and employees can be better spared from the factory than in March and dealers are enabled to visit the show and make their arrangements before the Spring trade opens. Mr. Penning favored February or March, but the general sentiment was for some time in January. On motion by Mr. Owen the matter was referred to the executive committee.

The subject of contests was introduced by H. Ward Leonard in a few forcible remarks in condemnation of the 14-mile endurance run which met with hearty applause. He urged that it was unfair to a maker that his car should be placed in the hands of an unknown and possibly incompetent judge—the observer—and that whatever the nature of the contest, it should be such as to make it possible to concentrate the judging in the hands of a small body of well-known and competent judges whose verdict would carry weight. Windsor T. White suggested a contest of 1,000 miles within six days, and C. E. Duryea made an objection to high-speed contests, suggesting a special course made to imitate actual road conditions. Ward Leonard suggested a contest over a special course on which a variety of conditions would be encountered, the program to include speed work on a

track, hill climbing, tests on bad roads, and similar work; mentioning the recent Circuit de l'Herault, in which speed, climbing, power, appearance, fuel consumption and other desirable qualities were rated in points. He finally made a motion to the effect that the meeting was in favor of such a contest and that all non-stop runs be limited to 100 miles distance; the motion being carried unanimously.

As a desirable place for a public contest John Brisben Walker suggested the Kingsbridge Road in upper New York from the end of the Speeeway up Fort George Hill and return. He pointed out the advantages of this location for the accommodation of a large concourse of spectators, and urged that if official permission could be obtained a very interesting contest could be held. His motion that this course be recommended to the executive committee was passed after being amended by Mr. Owen to the effect that if possible the use of the Speedway be secured as well.

Mr. Owen then brought up the question of allotment of space at the shows, a question that has now assumed considerable importance. While at the first show in Madison Square Garden in November, 1900, there was space for a wide track with the exhibits confined to the main floor within the track, the galleries and the restaurant, at the present time the main fioor is greatly over-crowded and many exhibits have been forced to the basement. In the course of the discussion it was suggested that each maker be limited to one ordinary space, but no definite action was taken.

The annual meeting of the executive committee will be held on February 5, the principal business being the election of a new board of officers. President S. T. Davis, Jr., who has held office since the organization of the association in November, 1900, will retire and it is probable that Windsor T. White, of the White Sewing Machine Co., of Cleveland, will succeed him.

COMMERCIAL VEHICLE CONTEST WILL PROBABLY BE HELD IN MAY.

One of the important meetings of the show, though attracting less attention than it deserved, was that of the Contest Committee of the Automobile Club of America with the makers of commercial vehicles. The committee includes John A. Hill, chairman, Emerson Brooks and Rolan R. Conklin; the makers represented were: The Vehicle Equipment Co., American Steam Carriage Co., Daimler Mfg. Co., Trumble Mfg. Co., Fischer Motor Vehicle Co., H. Bartol Brazier, Union Motor Truck Co., and Locomobile Co. of America.

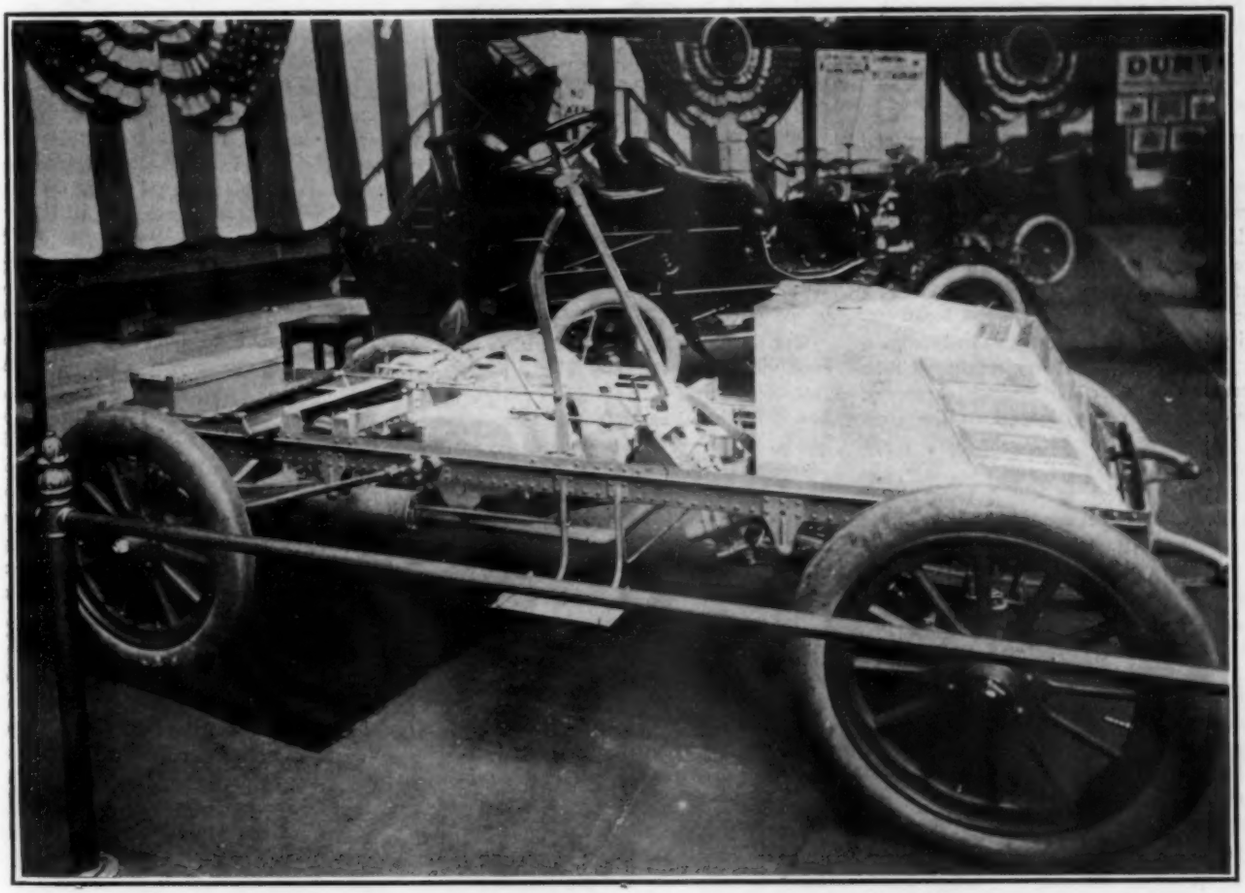
The committee had been in communication with the makers of commercial vehicles and had received replies from the following companies endorsing the idea of a public test:

Morgan Truck Co., Vehicle Equipment Co., Electric Vehicle Co., Searchmont Co., Adams Express Co., Daimler Mfg. Co., Upton Machine Co., Trumble Mfg. Co., Fischer Motor Vehicle Co., H. Bartol Brazier, Thornycroft Steam Wagon Co., Union Motor Truck Co., Locomobile Co. of America, Stearns Steam Carriage, Grout Brothers, St. Louis Motor Carriage Co., and Chicago Motor Vehicle Co.

The details of such a test were discussed, the general opinion favoring a trial of two or three days' duration, in part over the streets of New York. The date of the meeting will probably be in May, and the test will be open to both American and foreign vehicles.

Potter, President of Motor League.

At the annual meeting of the American Motor League, Isaac B. Potter, of New York, ex-president of the League of American Wheelmen, was elected president. The other officers were elected as follows: Charles E. Duryea, Reading, Pa., first vice-president; W. G. Murray, Chicago, second vice-president; F. B. Hill, Boston, treasurer; S. W. Merrihew, New York, secretary.



WINTON TOURING CAR CHASSIS, WITH HORIZONTAL MOTOR IN THE MIDDLE AND TANKS FORWARD.

THE AUTOMOBILE

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SATURDAY, JANUARY 31, 1903.

EXPERT IN LAW—AMATEUR IN THOUGHT.

An extended article on "The Law and the Automobile," by Wayne MacVeagh, occupies a leading position in a popular magazine recently. The views expressed in this article are reactionary to a degree more commonly associated with the utterances of vote-catching aldermen than with those of the ablest minds in the legal fraternity, and if they had emanated from a less influential source they might well be ignored altogether. Coming, however, from an ex-Attorney-General of the United States, they can hardly be passed unnoticed.

No one, however widely he may differ with Mr. MacVeagh, can fail to respect his honesty and courage. The article in question is the result of careful reflection and a genuine endeavor to be fair to both sides. The author has the courage of his convictions; but that his best efforts at impartiality and candor should produce no more valuable results merely goes to show how hopeless it is for the man who neither knows nor wishes to know any more about the automobile than that it goes fast and makes a noise, to attempt to settle its status on the highway.

Mr. MacVeagh's attitude throughout is that of the man who regards the automobile as a necessary evil, a thing with some uses and which it is impracticable to debar wholly from the road, but which must on no account be allowed any privileges whatever. A few quotations will illustrate:

"On the one hand, it is useless to contend that these powerful motors, however dangerous, are to be absolutely debarred from our highways. . . . On the other hand, it is equally useless for those who desire to use this new and dangerous engine upon the highways to contend that those using horses do so at their own peril, which would really mean that the use of horses on the highways must be abandoned. There is in this matter, as in almost all others, a golden mean, and it consists in ceasing to object to these vehicles being driven upon our highways, but in insisting that such regulations shall be applied to their use as will render it still possible for horses to be used upon the same highways without incurring too great danger or loss of life or serious injury, to those who either must or prefer to continue to use horses."

"It does not look now as if the use of these engines upon our highways can ever be made other than very objectionable; but all which can be fairly asked of those using them is that their use should be made as little objectionable as possible."

. . . "It is not easy to imagine why owners of vehicles propelled by such novel and dangerous agencies should expect exceptional privileges when in using them they are themselves protected from harm and when their mere appearance on the highways is very likely to endanger the life or limb of some friend or neighbor."

The author's fundamental assumption, as the above passages will indicate, is that it is impossible to train horses to stand the sight of an automobile; also that the greater the speed of the automobile the more frightened is the horse. As a matter of fact, it is notorious that the drivers of horses are far more apt to be frightened than their beasts, and that when the horse takes fright it is commonly because he is notified, by a sort of telepathy through the medium of the reins, that the approaching object is to be feared. The driving public is much more in need of education in this respect than the noble animal, and when the drivers of horses have been educated to stand the sight of an automobile without panic, the lesser animals will in nineteen cases out of twenty give no trouble.

One is not surprised that the holder of such views as these should be wholly destitute of practical knowledge of automobiles; but it is not often that an author exposes his ignorance so accommodatingly as does Mr. MacVeagh when he taxes the automobile with doing "serious injury" to the roads. Mr. MacVeagh actually does this, not once but twice, and pronounces this one of the unavoidable features of the machine, to be endured with such equanimity as can be mustered! Probably Mr. MacVeagh is under the impression that rubber tires create the dust as well as raise it.

With such premises it is hardly strange that the author, after advocating such measures as licensing and numbering, which when not abused are not in themselves objectionable, should pass on to some truly amazing recommendations for the restriction of power and speed. In brief, he proposes that the maximum permissible power for any automobile whatsoever shall not exceed 6 horse power, for the reason that that is "the greatest amount of animal power used on our highways"! The reader's momentary impression that this is intended to prohibit all but light runabouts for two people is speedily disabused by the assertion that, because the ordinary carriage horse cannot travel continuously faster that eight miles an hour, therefore "eight miles an hour in all suburban or country districts" should be the maximum speed ever permitted. This truly staggering suggestion is declared necessary on the ground that a higher rate of speed would be dangerous at crossings, and, moreover, would give the malefactor in an accident an opportunity to get away. To enforce such a limit, he is logical enough to perceive the necessity of prohibiting the construction of vehicles capable of exceeding that speed, and this, in fact, is what he proposes. To show that his proposal is not as vindictive as it sounds, he explains that by driving faithfully ten hours a day, "even the persons who most ardently enjoy the noise and dirt and odor and vibration of these vehicles" can put full 80 miles behind them, which is more than any one would think of doing with a horse.

To attempt to disabuse Mr. MacVeagh's mind of the belief that he has discovered the panacea for all automobile ills would be too great a task. Most persons, however, who are not satisfied to evolve an image of the automobile's characteristics out of their inner consciousness, like the German philosopher's camel, will be apt to inquire what sort of machine it may be which, capable of but eight miles an hour on level macadam, will still maintain that speed through sand or uphill. Doubtless a car of 6 horse power would carry four or even six people at eight miles an hour on the level, but we are afraid that it would shed all of them, including the driver, in going up much less steep hills than Mr. MacVeagh is probably acquainted with; while as to the going eight miles an hour under such conditions, its speed would probably be nearer two, unless the passengers pushed, in which case we might hope for two and one-half. In a word, to carry these suggestions into effect practically would shut out all automobiles except light runabouts, and these would need to carry some sort of a centrifugal governor on the rear axle. When one can, in an emergency and for a short distance, get a speed of 12, 15 or 20 miles an hour out of a horse, we think we see him preferring an auto scientifically restricted to eight!

When we consider the matter candidly, are we not bound to admit that the horse is a much more dangerous and treacherous means of locomotion than the automobile? Not a day passes in any large city without several runaways, many of them with fatal results, not only to the passengers, but to the innocent public as well; and it is only because we are used to such accidents and have learned to expect them as more or less inseparable from the use of the horse that they do not excite interest. Again, if the automobile is to be constructed so as to be incapable of exceeding eight miles an hour, what are we to say of the speedy trotters which the lovers of horses delight to put through their paces on the common roads? Doubtless, as Mr. MacVeagh

says, "one man is not at liberty to speed his horse on the public highway;" but as the temptation is often strong and the power to resist it is weak, let us protect the public by hamstringing without delay all horses capable of exceeding a seven-minute gait. Then we shall have true equality, and Mr. MacVeagh will be satisfied.

Seriously, is it not better to recognize in the automobile a new means of reducing the loss of time in travel, and to welcome it as we have welcomed the railway and the trolley car, neither of which can claim immunity from accident, but both of which are essential to our life to-day?

CALL FOR INTERNATIONAL CONFERENCE ON GOOD ROADS.

An international good roads conference has been called by President Horatio S. Earle, of the American Road Makers, to be held in Detroit on February 13 and 14 in connection with the annual meeting of the American Road Makers. Representatives from Canada and Mexico, as well as from all the States, are expected to be present.

The general topics for discussion will be the plan for a proposed system of macadam roads to connect the capitals of the States with one another and with those of Canada and Mexico, to be constructed and maintained by the co-operation of the Federal, State, county and township governments; and the Brownlow bill providing for an appropriation of $20,000,000 for the establishment of a good roads bureau and national aid in highway improvement. In view of the great importance and magnitude of the subject, President Roosevelt has been invited to be present at the conference and to deliver an address, and invitations have also been addressed to the members of both branches of Congress, to the governors of all the States and to the Canadian and Mexican officials. Governor Bliss and members of both Houses of the Michigan Legislature have already accepted invitations.

Besides the various State and county good roads organizations, the automobile clubs and similar organizations will be invited to send delegates to this conference. The New York and Chicago Road Association, the Connecticut Valley Highway Association, and the Automobile Club of America, have already signified their intention of being represented.

One of the results of this international good roads conference held at Detroit is expected to be the inauguration of a plan to secure the appointment of a federal commission into whose hands will be committed the task of selecting the routes for the inter-capital-connecting highways, and another a well organized effort to secure the co-operation of every good roads advocate in every congressional district in the country, who will bombard the various members of Congress with letters and petitions favoring the creation of a Bureau of Roads as provided for by the Brownlow bill.

Terms of Winton-Fournier Agreement for 25-Mile Championship.

The final agreement for a match for the track record of America between Henri Fournier, of Paris, and Alexander Winton, of Cleveland, Ohio, was signed on Jan. 23 in New York. Fournier will of course, drive a Mors car, the machine in which he made his mile record of 51 4-5 on the Ocean Boulevard in November, 1901, and his track record of 1:06 4-5 on the Empire Track, October 10, 1901.

Winton will drive the new car of his own make, presumably an improved Bullet, the car in which he made the record of 1:02 1-4 on the Glenville Track, Cleveland.

The agreement is as follows:

Articles of agreement by and between Alexander Winton, of Cleveland, O., and Henri Fournier, of Paris, France.

We hereby agree to compete in two automobile races—and, if a tie results, to have a deciding contest—the first race to be at the Empire City Track, Yonkers, New York, and the second at the Cleveland Driving Park, Glenville, O.

Saturday, July 25, 1903, shall be the date of the first race, with July 27 or the next available date in case of postponement. The distance of this event shall be 25 miles, standing start, contestants to start on opposite sides of the track, one at the wire and one at the half-mile post, positions to be decided by toss of the coin; the winner to be that operator who completes the distance in the fastest time. Should there be an accident to either machine in the first mile, the race shall be stopped and restarted.

A date between August 1 and 12, to be decided by March 1, shall be the date of the second race, with the next available date in case of postponement. The distance of this event shall be twenty-five miles, standing start, machines to start on opposite sides of the track, one at wire and one at the half-mile post, positions to be decided by toss of coin; the winner to be that operator who completes the distance in the fastest time.

Should there be any accident to either machine in the first mile the race shall be stopped and restarted.

The winner of two races of the series shall receive a $1,000 cup, same to be supplied by the Empire City Trotting Club and the Cleveland Driving Park Association.

Should a third race be necessary, the track shall be selected on which the fastest time is made in the two previous races. It is understood that Fournier and Winton shall not meet in a match or open automobile racing in the United States previous to this series.

Sanction and rules of the Automobile Association shall govern those races.

(Signed)

ALEXANDER WINTON,
By C. B. Shanks.
HENRY FOURNIER.
EMPIRE CITY TROTTING TRACK,
By Alfred Reeves,
Secretary.
CLEVELAND DRIVING CLUB,
By W. G. Pollock.

URGES $1,000,000 FOR GOOD ROADS IN PENNSYLVANIA.

Special Correspondence.

PHILADELPHIA, Jan. 24.—The feature of the annual report of the Secretary of Agriculture of Pennsylvania, John Hamilton, was the recommendation that $1,000,000 be appropriated for the construction and maintenance of country roads. The absence of good roads in this State is, in the opinion of the Secretary, the greatest obstacle now existing in the way of rural improvement. To secure these advantages, he urges the State to assume a portion of the burden of expense. Those now in charge of road-making in Pennsylvania are, generally speaking, men who know little of the technical features of the task to which they have been assigned; they are, almost to a man, ignorant and incompetent. A law was passed in 1897 (mainly through the efforts of the Pennsylvania Division of the L. A. W.) which would have remedied the evil, and would have given each district an opportunity to employ the best road constructors; but the opponents of the measure succeeded in saddling upon it an amendment which provided that it should not go into effect until the sum of $1,000,000 should have been appropriated for the purpose. Of course, such an amount could not be spared in a single year, and the law has remained inoperative. The Secretary now proposes either that this million dollars be appropriated or that the section requiring the appropriation of that amount be repealed in order that the remainder of the law, which wheelmen, horsemen and automobilists agree possesses excellent features, may go into effect.

An additional recommendation urges the employment of convicts on the public roads. The various courts, he thinks, should be allowed to sentence able-bodied criminals to labor on these highways, and quotes from the North Carolina law, which he favors.

Plans for an auto stage line to run between Patchogue, Sayville, Islip, Bay Shore and Babylon on the south shore of Long Island are being considered by local business men. The extreme distance is about 20 miles, over fair roads. The line, if equipped, would cause the abandonment of a proposed trolley road.

TAX ON AUTOMOBILES FOR ROAD IMPROVEMENT.

ALBANY CONVENTION WANTS BILL.

Recommendations of Standing Committee of New York Supervisors' Convention Are Adopted and Brownlow Bill Is Endorsed—Governor Speaks—Engineer's Statement.

Special Correspondence.

ALBANY, Jan. 24.—The delegates to the Good Roads Convention finished their labors and debates last Wednesday. They adopted a resolution by Gilman of Onondaga, favoring the taxing of automobiles and the spending of the money collected through such tax on the highways, and ordered a bill embodying the idea to be presented to the Legislature. The recommendations of the standing committee relative to the Bond bill, $2,000,000 appropriation, wide tires, and signposts were adopted and bills for the Legislature ordered prepared.

Senator Armstrong spoke to the delegates on the Higbie-Armstrong bill and the Fuller rebate act which he said were not antagonistic but were born together and for the same purpose, the improvement of highways; the one was for the main market roads and the other for the side roads.

State Engineer Bond favored the appointment of county engineers, and the resolution urging supervisors to appoint such engineers under the law now on the statute books was adopted.

The Brownlow bill in Congress was endorsed.

GOVERNOR ODELL'S ADDRESS.

Governor Odell attended the meeting in the afternoon, met the delegates and addressed them in part as follows:

I am very much interested in the subject of good roads, as you probably are aware from results of my action and sanction of the various measures that have been proposed and passed by the Legislature.

The State of New York has a great many problems before it; some of them of immense magnitude. I have frequently stated that I believe that the good roads were a necessary part of the canal improvement of the State. While the canal has for its object the building up of the commerce of New York, the good roads give to the farmers an easy means of conveying their products to nearby towns and to railway stations; also an added commerce to the Greater State. The many demands that have been made upon the State during the past few years have led to some criticism as to expenditures. Were it not for the fact that the benevolent people of the State had rightfully concluded that the care of the indigent poor and insane should be transferred to the State, our funds would be ample without any bond issue to carry on the work in which you are engaged. It probably would be ample to also meet the requirements of canal improvement, but these additional burdens which have been placed upon us and which the people demand shall be carried out, give to every one the right and the care to which they are entitled for placing additional burdens on us, and therefore, we must look in other directions for additional revenue.

Several propositions have been made by me in my annual message this year for raising the deficiency which, perhaps, if granted by the Legislature will be sufficient to meet your requirements for the good roads now under contemplation.

I have also recommended to the Legislature that should there be any constitutional amendment looking to a longer period for payments of bonds that they should also include those issued for the building of good roads. I am very hopeful that these measures will receive the approval of the Legislature. If they do not, of course, we shall have to do as any prudent business man would do under the circumstances—cut the appropriation to the extent of our revenue.

So far as it is within my power I shall aid you in every way possible in the furtherance of the good work in which you are engaged.

ENGINEER BOND'S STATEMENT.

State Engineer Bond was in attendance with a printed statement of the work done on the roads by the State since the passage of the Higbie-Armstrong Act. This work is summarized in the following table:

Comparative Progress under State Aid Law in New York State.

During year.	State appropriations	Amount appropriated by different counties.	Different counties filing first petition.	Mileage covered by petitions to January 1, 1903.	Mileage covered by plans of roads adopted by counties.	Total mileage of completed improved roads.
1898	$50,000	$63,872.00	17	502	21	0
1899	50,000	42,876.00	13	157	9	5
1900	150,000	431,227.00	16	155	130	35
1901	420,000	1,055,874.00	27	495	247	20
1902	795,000	1,748,115.96	46	1,106	418	126
	$1,465,000	$3,341,964.96		2,415	825	186

One-half of the necessary funds for the improvement of 825 miles has been provided by the counties within which the several roads are located. The State has appropriated up to January 1, 1903, sufficient money to provide for its one-half of 355 miles of this 825, leaving 470 miles yet to be provided for. Of the 355 miles 186 are completed and in use, not including 90 miles of finished work forming parts of 169 miles now under contracts not fully completed but which will be completed early this year (1903). The 470 miles will be taken up for construction as soon as sufficient funds are provided by the Legislature.

NEW STREET TRAFFIC ORDINANCE FOR NEW YORK.

A new ordinance for the regulation of street traffic in New York was the subject of a hearing before the Aldermanic Law Committee on January 19. The measure was drafted by William P. Eno, and among other things limits the speed of automobiles and bicycles to ten miles an hour throughout the city and to three miles when crossing north and south thoroughfares and when turning. President Cantor, of the Borough of Manhattan, was present at the hearing, as was also W. W. Niles, counsel for the National Association of Automobile Manufacturers, who spoke in favor of the amended Oatman ordinance agreed upon by the Automobile Club of America and the Committee of Fifty, providing for a rate of eight miles an hour in the crowded portions of the city and fifteen miles in the suburban sections. Alderman Oatman, who proposed the original measure, was at the hearing, but did not join in the discussion. It had been understood that the compromise ordinance would be favorably reported by the law committee and it had been so announced without denial.

Josiah C. Pumpelly, of the City Improvement Association; Ashley W. Cole, of the State Railroad Commission, and Orrin Root, assistant to the president of the Interurban Railway, were present, and together with President Cantor, favored the Eno ordinance. Neither the Automobile Club of America nor the Committee of Fifty, which was organized to secure the regulation of street traffic, was represented at the hearing. The law committee did not indicate what report would be made to the Board of Aldermen.

Among the important features of the new rules are:

A vehicle turning from one street into another to the right shall turn the corner as near the curb as practicable, and keep on the right in the street into which it turns.

In turning into another street to the left the vehicle shall turn around the intersection of the two streets.

A vehicle shall not stop at the left-hand curb except on licensed truck and cab stands.

A vehicle crossing from one side of the street to the other shall not go directly or diagonally across, but shall describe a semi-circle.

It is also provided that surface cars shall come to a full stop before crossing a crowded street.

MOTOR BOATS

GROWTH AND TENDENCIES IN CONNECTICUT LAUNCH TRADE.

Special Correspondence.

NEW HAVEN, Jan. 26.—This will be the best year the manufacturer of first class motor boats in Connecticut has ever seen. There was a heavy trade in these boats last year, and the increase in their number is estimated by good judges to have been fully 33 1-3 per cent. It will be much larger this year, and the boats will be of larger size and of a quality superior to any that have ever been attempted before.

All of the Connecticut manufacturers of these craft seem to be rushed with work, and it is evident that there will be a large sale of boats this year of a price ranging from $1,000 to $1,500. There will of course be a great many cheap launches put afloat, but the number of $1,500 launches that will be brought out this year in time for their owners to take their families on the summer vacation will exceed the total number of these expensive launches now in existence in the State.

As showing the wide variety of uses to which these craft are to be put, one is to be used in submarine diving, one is to run across the Atlantic Ocean to Europe, one is to spend a summer on the Great Lakes and the following winter in the South and one is to run as a freighter across Long Island Sound is growing rapidly Besides these fields, new ones are coming to light every day as parties are approaching builders with new and important propositions

There is really no way of estimating the number of smaller launches that will be built, as hundreds are being constructed by owners themselves, who will purchase motors and install them.

One of the signs of the times is the concerted effort that is making among the more prominent manufacturers of marine motors to reduce the number of parts and fittings that tend to make a motor "shaky" after it has been run for a time. For instance, a favorite type of motor rig with some launchmen is a pair of engines set tandem on the same shaft, the shaft being connected between the engines by a coupling. But it has been found by experience that this coupling works loose, and as the engines are two different machines, the worst results are soon felt. Again, the single cylinder motor of high power is found to work with a shock that renders navigation with it unpleasant.

Manufacturers have been seeking to remedy all these faults. The result has been the use of solid steel shafts and the adoption of motors of three or more small cylinders.

The small cylindered engine is in fact the newest thing to-day in the motor boat world in Connecticut. A few words descriptive of the new Foster three-cylinder, two-cycle, 7 1-2 horse power engine, which is being built in this city, will explain the advantages of the new over the old. The three cylinders are exactly alike, and are bolted firmly onto a heavy cast bedplate through which runs the solid steel one-piece shaft of the boat. There is no chance for jarring or getting out of line, or the working loose of a coupling. The cylinder chambers are 3 7-8 inches by 4 1-2 each of 2 1-2 horse power. The shocks, being divided, as the cranks are set at different angles, counteract each other to an extent and they are not so severe as in the larger single cylinder. The engine will "turn up" 450 revolutions per minute, and in the three-cylinder machine this will mean 1,350 explosions in that time. Thus the annoying "putter," "putter," of the motor boat will be reduced to the continuous and not offensive operation of the rapid fire, three-cylinder machine.

SPEED OF TORPEDO BOAT STERN DEMONSTRATED.

Special Correspondence.

NEW LONDON, Jan. 26.—Having succeeded in producing a 16-foot yacht tender with torpedo boat stern that will speed ten miles an hour with a 2 1-2 horse power engine, the Holmes Shipbuilding Co., of West Mystic, Conn., has turned its attention to larger craft of the same design, and has finished a boat 27 feet on waterline, which, with a 4 1-2-horse power two-cycle engine that has covered eleven miles within the hour. The boat was constructed for two engines of this size, and it is anticipated that with the increased power the launch will easily make about thirteen miles.

C. H. Holmes, the designer of both boats, is firm in the belief that all high-speed launches in the future will have the torpedo-boat pattern of stern. He has in preparation designs for a large launch in which the principal features of the smaller boats are preserved. This craft may be used either for business or pleasure purposes. Mr. Holmes believes in the practicability of a boat 60 feet long, equipped with engines developing 50-horse power and built very light to be used for a sea scout, as recently suggested by the *London Star*—a boat to be utilized in conjunction with a war fleet in the same manner as military motor bicycles are used on land for scouting. The theory is advanced that the ordinary torpedo boat is too long and draws too much water for scouting near shore or in shallow water, but a launch might be made to draw less than three feet of water and yet have a speed of upward of 30 miles. There would be no funnels or smoke to attract the notice of the enemy, and with underwater exhaust the boat might be made almost silent.

Another experiment which must be credited to this section of Connecticut is to be made by Messrs. Raymond & Horton, of Niantic, near this city, who are equipping their fishing boat *Miriam* with an electric motor. The *Miriam* is about 30 feet in length and is used in tending fish ponds. The boat will doubtless be the first along the New England coast using electric power from storage batteries. The users of the explosive motors among the fishermen hereabouts are skeptical and free in advancing opinions for the expected failure of the *Miriam*.

Awakening Interest in Akron.

Special Correspondence.

AKRON, O., Jan. 24.—Though the cutting of ice on the lakes about Akron is in progress and the snow lies inches on the level, the talk of a launch club for next season draws nearer the organization point. There are a score of naphtha launches on the local lakes and the canal which connects several of them, and last season a series of race meets excited general interest. The cup is now held by F. W. Work, brother of B. G. Work, vice-president of the B. F. Goodrich Co., who owns the *Corsair*. Mr. Work contemplates crossing Lake Erie in the launch early next season. The proposed improvements on the Ohio Canal and the Muskingum River will give a great impetus to the use of motor boats of all sorts in this section.

Launch Motors at the Auto Show.

The Buffalo Gasoline Motor Co., Buffalo, N. Y., had two spaces, 40 and 41, where it showed a full line of its new pattern of motors, 24, 14 and 8 horse power, all four-cylinder, four-horse power two cylinder, and a two-horse power two-cylinder. These motors, which merit the attention of yachtsmen, have been remodeled and materially improved since last year.

The U. S. Long Distance Automobile Co. showed one of the Standard Marine motors of 25 horse power.

Launches on the Ways.

The Darien Launch Works has been commissioned by Joseph Binns, of Brooklyn, N. Y., proprietor of the Norwalk Chemical Works, to build a 40-foot launch with cabin and modern fittings. The engine has not yet been selected.

Greenport (L. I.) yachtsmen have in the works at Captain James P. Clark's boat shop at Niantic, two 25-foot launches that are to be ready for delivery in April. Captain Clark has also laid down the keel of a 40-foot fishing launch for himself, which is to have a 12-horse power gasoline engine.

Captain Charles B. Snow, of Norwich, Conn., is building a 30-foot, wide-beam launch designed for mackerel fishing in Long Island Sound. The craft will have twin screws and two Gray engines. With light draught a speed of twelve miles an hour is anticipated.

Drastic Law for New Jersey.

EDITOR THE AUTOMOBILE:

Sir—Since the Governor of New Jersey has stated in his message to the State Legislature that he can see nothing but good in the trusts and that the only evil in the State is the automobilists and their deadly machines, it is time for automobile owners and those interested in the industry in this State to get together and use their influence to have a rational law passed that will be just to all.

Express trains can dash across a public grade crossing at the rate of 70 miles an hour and trolley cars can run at the rate of 30 miles an hour on a public highway for private gain, but an automobile according to the Governor's idea should not exceed 15 miles an hour.

A little more than one year ago twenty to thirty persons were killed in one day by the explosion of a racing steamboat on the Delaware, but no law has been passed as yet to limit their speed

I have run an automobile 2,000 miles over the roads of this State and outside of the cities I have run at twenty miles an hour most of the time without hitting or killing anyone. Owing to the control a man has over an automobile even a faster rate can be made in many places without any danger whatever.

As it is very likely a law will be passed at this session of the Legislature, I think some action should be taken right away. I would like to hear from anyone interested in this matter. R. I. HAINES.

Camden, N. J., 300 Kaighn Ave.

EXTRACT FROM GOVERNOR'S MESSAGE.

The increasing use of automobiles, and the record of accident and death caused by them, make it important that the Legislature should pass a law regulating their use. They are machines which, as everyone knows, may go anywhere. If a man is to drive a locomotive engine, he must serve years of apprenticeship as a fireman and undergo successfully a rigid examination as to his duties. And the locomotive engine is confined to a carefully built track, from which it is never able to move very far. An automobile, with its power to run wild, is now allowed to be driven by men, women or children, who, in the majority of cases, have little knowledge of machinery, and when the thing goes wrong, as it frequently and suddenly does, they are helpless.

A record of the accidents of the last year would be a long and sad one. In the interest of the lives and comfort of the community, I ask the Legislature to pass a law that will require a suitable examination to be passed before any one may be allowed to drive an automobile, and that no automobile shall be allowed in this State that is geared to run at a higher speed than fifteen miles an hour. If, because of the construction of certain machines, this is impractical, definite speed regulations in such cases might be defined.

Scovel Licensing Bill.

The first move toward putting into effect the recommendation concerning the licensing of automobiles made by Governor Murphy, of New Jersey, in his message to the Legislature has been made by Assemblyman Scovel, of Camden, who last week introduced a bill providing that a board of automobile examiners be named by the Governor.

This board is to consist of five members, each of whom is to receive an annual salary of $500 a year. Before any one can legally operate an automobile in New Jersey he must go before this board and be examined as to his fitness to operate a machine. Upon the payment of $5 he will then be given a license, which he can have renewed annually upon the payment of a fee of $5.

The proposed law fixes the maximum limit at which a motor vehicle may be operated on the roads of the State at fifteen miles an hour. Any person found operating an automobile without a license may be arrested by any constable or other law officer without waiting to swear out a warrant. It is provided that any mayor, recorder or police magistrate may impose a fine of $50 or imprisonment of thirty days, or both, for each offense. The conviction is to be final.

For refusing to exhibit a license to any constable or law officer the automobilist may be fined or imprisoned, as the committing magistrate may elect.

The measure is drastic but as it is wanted by Governor Murphy it has a good chance of passing both branches of the Legislature in the form in which it was submitted.

EDITOR THE AUTOMOBILE:

Sir—Assemblyman Scovel has personally promised the writer to give the automobilist a hearing before his committee on the proposed measure. You can easily see the hardships this bill will inflict upon the users of motor cars. The road to Atlantic City is sixty miles long and perfect. Many automobilists will try to go to Atlantic City this summer and, not knowing of this law, will get down the road a few miles and then be held up by some constable and, not having a license, will be fined $50.

Then, think of the annoyance of being held up every few miles as we go from one township to another, each officer forcing us to stop and show our licenses. Think also of fifteen miles an hour down in the Jersey pines where you do not see a house or man for miles.

Something should be done. The horse owners are against us and the public in general, so it must be done by those interested in motor cars. Horses are allowed to race at the rate of twenty-five miles an hour; trains run over grade crossings at the rate of seventy miles; trolley cars at the rate of thirty miles; bicycles at twenty-five miles, and the poor automobilist is cut down to fifteen miles under penalty of heavy fine.

Agitate this matter. Let us get together and fight. OSCAR A. EASTLACK.

Camden, N. J.

Insurance on Automobiles.

EDITOR THE AUTOMOBILE:

Sir—You will recall, in your July issue, you stated, under the head of "Insurance, Direct and Incidental," that a new policy had been devised for covering automobiles and motor cycles while within buildings from the risk of fire. I would appreciate very much advices from you in this matter.

EDWARD A. COLBY.

Newark, N. J.

EDITOR THE AUTOMOBILE:

Sir—Regarding insurance on automobiles, I beg to say in reply to Mr. Colby's letter, that the only policy that we can write for him will be what we term the "floater" policy. I send you herewith a specimen of the form which we use to cover this class of business, but it will be impossible for us to state what companies will take this risk as we have a syndicate and it depends entirely upon where the risk is located and the class of machine to be insured. We have a contract with some of the strongest companies in the city to accept business for us after we have examined same and recommended it.

FORM ON FLOATER POLICY.

Richard Roe & Co.

Five thousand dollars on one.....gasoline automobile, including all parts, connections, tools, fittings, supplies and appurtenances, all while contained in the brick building occupied as storage warehouse situate No. 1010 Blank Avenue, Borough of Manhattan, and temporarily while anywhere within the States of New York, New Jersey, Pennsylvania, Connecticut, Rhode Island and Massachusetts.

It is warranted by the assured that the filling of the reservoir of the automobile hereby insured shall take place by daylight only.

All rights, benefits and privileges of the standard Electric Light, Lightning and Averages clauses and Mechanic's Privilege granted, whether attached or affixed hereto or endorsed hereon or not.

It is a condition of this policy that this company is not liable for any loss or damage to said automobile or any of its parts or its contents when insured under this policy, caused by explosion or fire originating in the automobile itself.

Of course this is a new business and new people are going in and out of it every day, but it is noticeable that during the past two years no firm has remained as specialists in this line for a longer period than three or four months, owing to the fact that it is a most peculiar line, necessitating unusual facilities and greater knowledge of insurance laws than the average broker possesses. This is due to the fact that in every State the insurance laws are different, and the policies issued differ in conditions as well. The result is that the broker issuing the business finds himself confronted with conditions which tax him to the utmost to write a form which will not be a violation of any State law under which the policy is to cover.

The insurance companies have very little to do with the forms used on policies and if your subscriber wants to get the latest and best forms to cover automobiles and motor cycles it would be well for him to

elect a broker who is thoroughly conversant with this class of business, because it is the broker who draws the forms that you see on the policies and if the broker is competent he will draw a better form than one who is not. It is necessary to prevent possible future complications that the forms be drawn not only in accordance with the ideas of the insured but also in accordance with the laws regulating insurance decisions.

As far as motor cycles are concerned, as well as automobiles, it is necessary that a certain amount of gasoline should be used and be on the premises. This is a prohibited article and unless special consent is endorsed on the policy no loss would be paid by the company, providing it deemed it expedient to contest it.

AMERICAN ESTATES MANAGING CO.,
Dixie Hines.

New York.

PRESIDENT PALMER OF THE CHICAGO CLUB RESIGNS OFFICE.

Special Correspondence.

CHICAGO, Jan. 26.—Members of the Chicago Automobile Club were surprised to receive a notice of a special meeting, called for last Friday evening, for the purpose of accepting the resignation of the president and electing his successor. Much speculation as to the causes leading to this move on the part of President Palmer was indulged in, and on Friday evening there was quite a large attendance, but after a short discussion the meeting was postponed for one week, owing to the absence of so many of the automobilists in New York.

When the 8-inch figure ordinance was passed by the Chicago council, say those interested, Alderman Palmer sat in his chair, and allowed the measure to be railroaded through, without even asking that it be referred to a committee.

During the same week, the same gentleman, now transformed into President Palmer, of the Automobile Club, presided over the most enthusiastic meeting ever held in the club's history, the whole burden of the songs of the different members present being one of defiance and indignation at the proposed ordinance. The result of this meeting was seen later, when the mayor vetoed the measure, though it is understood it was his original intention to sign it.

After making several tests at different speeds, with figures of different size attached to his automobile, Alderman Palmer drafted and had introduced in the city council an ordinance requiring automobiles to carry four-inch numbers in conspicuous places. The ordinance was passed at last week's meeting. That the mayor will sign it there is little doubt.

That the members of the Automobile Club will not submit to such a law is just as positive now as it was at the time President Palmer presided over the indignation meeting spoken of.

Exhibitors at the Chicago Show.

Less than 1,000 square feet of floor space in the main building and annex of the Coliseum remained unsold for the Chicago Automobile Show on January 24 out of a total of more than 60,000 feet offered. The complete list of exhibitors is given below. Reduced rates of one and a third fare for the round trip to the good roads convention of the National Association of automobile manufacturers at the Coliseum on February 20 have been granted by the New England Passenger Association as well as by the Central and Eastern Associations. It is expected that this will be without question the best automobile show ever held in the Western metropolis.

LIST OF EXHIBITORS.

American Darracq Automobile Co., New York.
Apperson Bros. Automobile Co., Kokomo, Ind.
Badger Brass Mfg. Co., Kenosha, Wis.
Berg Automobile Co., New York.
Bartholomew Co., Peoria, Ill.
Brecht Automobile Co., St. Louis.
Brandenburg Bros. & Alliger, Chicago.
Brennan Mfg. Co., Syracuse.
Cadillac Automobile Co., Detroit.
Chelsea Mfg. Co., Chelsea, Mich.
Cleveland Automobile Co., Cleveland.
Chicago Motor Cycle Co., Chicago.
Conrad Motor Carriage Co., Buffalo.
Crompton Motor Carriage Works, Worcester, Mass.
Crest Mfg. Co., Cambridge, Mass.
Cryder, Henry, Marion, N. J.
Dasey, P. J., Co., Chicago, representing the Champion Mfg. Co., Dayton Electrical Mfg. Co., Dow Portable Electric Co., Salamandrine Boiler Co., and the Western Motor Co.
Dietz, R. E., Co., New York.
Dixon, Joseph, Crucible Co., Jersey City.
Diamond Rubber Co., Akron.
Electric Vehicle Co., Hartford.
Electric Contract Co., New York.
Electric Storage Battery Co., Pittsburg.
Elmore Mfg. Co., Clyde, O.
Friedman Automobile Co., Chicago.
Firestone Tire & Rubber Co., Chicago.
Fisk Rubber Co., Chicopee Falls, Mass.
Fisher, Carl, Indianapolis.
Searchmont Automobile Co., Philadelphia.
Flint Automobile Co., Flint, Mich.
Graham Automobile & Launch Co., Chicago.
General Automobile Co., Cleveland.
Gray & Davis, Amesbury, Mass.
Goodrich, B. F., Co., Chicago.
G & J Tire Co., Indianapolis.
Haynes-Apperson Co., Kokomo, Ind.
Hartford Rubber Works Co., Hartford.
Hoffman Automobile & Mfg. Co., Cleveland.
Hyatt Roller Bearing Co., Harrison, N. J.
Illsley, Frank P., Chicago.
Imperial Wheel Works, Flint, Mich.
International Motor Car Co., Toledo.
Jackson Automobile Co., Jackson, Mich.
Jeffery, T. B., & Co., Kenosha, Wis.
Johns-Manville, H. W., Co., New York.
Knox Automobile Co., Springfield, Mass.
Kirk Mfg. Co., Toledo.
Kammann Mfg. Co., Chicago.
Lindsay-Russell Co., Indianapolis.
Locomobile Co. of America, New York.
Marble-Swift Automobile Co., Chicago.
Matheson Motor Car Co., Grand Rapids, Mich.
Merkel Mfg. Co., Milwaukee, Wis.
Mobile Co. of America, Tarrytown-on-the-Hudson, N. Y.
Motor Development Co., Chicago.
McCanna, John P., Co., Chicago.
Motsinger Device Mfg. Co., Pendleton, Ind.
Mead Cycle Co., Chicago.
National Automobile & Motor Co., Oshkosh, Wis.
National Carbon Co., Cleveland.
National Vehicle Co., Indianapolis.
Olds Motor Works, Detroit.
Pardee & Co., Chicago, representing the American Motor Carriage Co., Centaur Motor Vehicle Co., and the Packard Motor Car Co.
Peerless Motor Car Co., Cleveland.
Pierce, Geo. N., Co., Buffalo.
Pittsburg Reduction Co., Pittsburg.
Prescott Automobile Mfg. Co., Passaic, N. J.
Porter Storage Battery Co., Chicago.
Pope-Robinson Co., Hyde Park, Mass.
Premier Motor Mfg. Co., Indianapolis.
Peterson, K. Franklin, Chicago, representing the American Roller Bearing Co., Baldwin Cycle Chain Mfg. Co., Brown-Lipe Gear Co., Cleveland-Canton Spring Co., Konigslow, Otto, and the Midgley Mfg. Co.
Rose Mfg. Co., Philadelphia.
Russell, C. W., Springfield, O.
Stearns, F. B., Co., Cleveland.
Studebaker Bros. Mfg. Co., South Bend, Ind.
Shelby Motor Car Co., Shelby, O.
Shelby Steel Tube Co., Chicago.
Stevens, J., Arms & Tool Co., Chicopee Falls, Mass.
Standard Welding Co., Cleveland.
St. Louis Motor Carriage Co., St. Louis.
Speedwell Automobile Co., Milwaukee.
20th Century Mfg. Co., New York.
Thomas, E. R., Motor Co., Buffalo.
Thomas & Bowman Automobile Co., Buffalo.
Timken Roller Bearing Co., Canton, O.
Tennant, J., Youngstown, O.
Temple, Ralph, & Austrian Co., Chicago, representing the Franklin, H. H., Mfg. Co., Smith & Mabley, Standard Motor Vehicle Co., and the U. S. Long Distance Auto. Co.
Veeder Mfg. Co., Hartford.
Winton Motor Carriage Co., Cleveland.
Wisconsin Wheel Works, Racine Junction, Wis.
Woods Motor Vehicle Co., Chicago.
Whitney Mfg. Co., Hartford.
Westinghouse Co.'s Pub. Department, Pittsburg.
Wagner Cycle Co., St. Paul, Minn.
Waterloo Gasoline Engine Co., Waterloo, Ia.
Wick, H. B., Youngstown, O.
Westerfield Motor Co., Anderson, Ind.
Willis, E. J., New York.

Exhibitors at the Detroit Show.

Special Correspondence.

DETROIT, Jan. 24.—Cards have been mailed by Seneca G. Lewis, secretary of the Second Annual Automobile and Sportsmen's Show, to be held in the Light Guard Armory from February 9 to 14, under the auspices of the Tri-State Automobile and Sporting Goods Association, giving the list of exhibitors and the special attractions for the occasion. The concerns that will display automobiles, motor bicycles, tires or lamps, either directly or through their agents, is as follows:

Olds Motor Works, Cadillac Automobile Co., Northern Mfg. Co., W. E. Metzger, J. P. Schneider, Baker Electric Vehicle Co., Ide-Spring-Huber Automobile Co., THE AUTOMOBILE, Kirk Mfg. Co., Peerless Mfg. Co., F. P. Illsley, Elmore Mfg. Co., W. L. Marr, Geneva Mfg. Co., White Sewing Machine Co., Thomas Jeffery & Co., Jackson Automobile Co., Electric Vehicle Co., Sandusky Automobile Co., Waltham Mfg. Co., Flint Automobile Co., W. H. Weber, Max Dingfelder, Matheson Motor Car Co.,

Henry Ford Co., Winton Motor Carriage Co., International Motor Car Co., Hartford Rubber Works Co., Fisk Rubber Co., 20th Century Mfg. Co., Bloomstrom Motor Co., B. F. Goodrich Co., Veeder Mfg. Co., Badger Brass Mfg. Co., New Departure Bell Co. and P. & F. Corbin.

One of the special attractions is to be Tom Cooper and his racing car in speed trials against time on the speedonome.

The Armory will be placed at the disposal of the exhibitors on Saturday morning, February 7, two days before the opening of the show.

Exhibitors for Washington Show.

Special Correspondence.

WASHINGTON, D. C., Jan. 27.—Twenty-nine different makes of automobiles, five motor bicycles, three tires, two lamps and two miscellaneous displays of parts and supplies are already assured for the third annual local automobile show to be held in the armory of the Washington Light Infantry Corps from March 23 to 28 next. Of the complete vehicles to be displayed, three makes are electric, four steam and twenty-one gasoline. Manager B. C. Washington, Jr., says it is highly gratifying to note the value that manufacturers place on the local shows, a striking evidence of which he has in the fact that a number of makers have already taken space for the Washington show to be held in 1904.

Following is a list of exhibits to date for the 1903 show:

Electric Vehicles—Waverley, American and Columbia. Steam—Locomobile, Reading, Toledo and Stanley. Gasoline—Elmore, Cadillac, Toledo, Winton, General, Stevens, Duryea, Warwick, Reading, Rambler, Locomobile, Conrad, Cleveland, Oldsmobile, Autocar, Packard, Peerless, Columbia, Long Distance, Knox, Northern, Searchmont, Spaulding. Motor Cycles—Clement, Warwick, Indian, Orient, American. Tires—New York, Diamond, Fisk. Lamps—Rose Mfg. Co., Twentieth Century. Parts and Supplies—Automobile Storage and Repair Co. and National Electric Supply Co.

Motor Delivery in Indianapolis.

Special Correspondence.

INDIANAPOLIS, Jan. 24.—Horse-drawn delivery wagons used by the large department stores of the city are being displaced by electric and gasoline wagons. Several of the stores have changed their entire equipment.

The New York Store, Rink's, Deschler's, and several other stores have given the machines a thorough trial and have announced that they will soon dispense entirely with the old wagons. A year ago there were but two or three motor delivery wagons in town, whereas now many are to be seen on the streets and dealers are expecting a large spring business in his line.

CLEVELANDERS PLEASED WITH SHOW RESULTS.

CONSTANT FIGHT FOR AGENCIES.

Outputs of a Number of Factories Nearly All Contracted For and Supplemental Orders for Material Placed by the Makers—Local Show Space All Taken.

Special Correspondence.

CLEVELAND, Jan. 26.—To say that Cleveland tradesmen were pleased by the results obtained from the Madison Square Garden Show would be putting it mildly. A number of local people went to New York feeling that perhaps the trade was being overdone; that there were too many in the game, and that possibly it might be difficult for all to dispose of all the vehicles they could make. But to-day optimism is the keynote of every one who went to New York. All are unanimous in saying that there never was an exhibition at which so much real interest was displayed, and where so much genuine business was transacted. Local makers say that before they got their machines uncrated and ready for display, they were surrounded by agents desiring to make sure of a connection for a certain territory. And it was a fight for agencies all through the week, with the result that when some of the Cleveland manufacturers came to count up their sales at the close of the week, they discovered that they had promised to deliver about all the vehicles they could build, and in one or two cases more than they can build.

Several of the leading manufacturers made arrangements before they left, to secure more material of various kinds, and one or two started for home early in order to arrange for more equipment and the rearrangement of factory space in order to increase the output they had originally planned for. With the Cleveland, Detroit and Chicago shows, at which several of the local manufacturers will be represented, it is a safe guess that more than one Cleveland maker will be declining to take any more orders before the close of the Chicago affair.

Agents and manufacturers were not the only Clevelanders who took in the show. Many prominent business men found that they had pressing business in the metropolis last week and "incidentally" they visited the automobile show. A number of new enthusiasts made their first purchase, at the big exhibit, and still more decided they would place orders after they had arrived home and studied catalogues.

EXHIBITORS AT CLEVELAND SHOW.

Secretary W. F. Sayle, of the Cleveland Automobile Show has announced the following list of exhibitors at Gray's Armory next week: Winton Motor Carriage Co., Northern Ohiomobile Co., Ohio Motor Car Co., Cleveland Automobile & Supply Co., Locomobile Co. of America, International Motor Car Co., Waltham Mfg. Co., F. B. Stearns Co., Fredonia Mfg. Co., Shelby Motor Car Co., Union Automoible Co., Kirk Mfg. Co., Geneva Automobile & Mfg. Co., General Automobile & Mfg. Co., Elmore Mfg. Co., Oldsmomile Co., E. R. Thomas Motor Co., Post & Lester, National Carbon Co., Diamond Rubber Co., Pittsburg Reduction Co., International Automobile & Vehicle Tire Co., D. E. Foote Co., John H. Graham & Co., Kelley Handle Bar Co., Veeder Mfg. Co., 20th Century Mfg. Co., B. F. Goodrich Co., Electric Storage Battery Co., Fisk Rubber Co., Gray & Davis, L. J. Mueller, *The Horseless Age* and THE AUTOMOBILE. This list covers all the spaces that can possibly be arranged for in the Armory, and it is probable that a number of eleventh-hour applicants will be disappointed.

DEPARTURE IN AUTOMOBILE RETAILING IN NEW YORK.

The managers of the big New York department store of R. H. Macy & Co., Broadway and 34th Street, have hit upon a novel plan for going into the automobile business. They propose to inaugurate a continuous automobile show, charging the exhibitors nothing for the spaces they occupy, and admitting the public free.

The entire ninth floor of the big building, which is the top floor and looks like a small reproduction of Madison Square Garden, will be devoted to automobiles. A score of passenger elevators afford quick transportation from the ground floor for visitors, and the automobiles will be taken up on the large carriage elevators in the rear of the building. There is ample room for at least twenty exhibits, and each booth will be large enough for from four to six machines. At the rear of the big room is a smaller one, which will be used for storing machines that are not ready for exhibition, and also for storing parts and equipments. Machines for demonstrating purposes will be kept in an enclosure in the rear of the building on the street level with delivery wagons.

The plan is to allow manufacturers to exhibit their vehicles free of charge, the electric light, elevator service and janitor service being supplied by the store. A commission will be charged, however, on all machines sold. The Macy Company will employ an expert to have charge of the department who will sell machines, but exhibitors will be expected to have their own representatives in charge of their exhibits, as each manufacturer will be required to take entire charge of his own booth and arrange his displays to suit himself.

The automobile floor has a huge arched skylight along its entire length, and there are two rows of iron pillars supporting the eaves of this big dome. The space directly under the skylight will be kept cleared.

DATES OF SHOWS AND CONVENTIONS.

Feb. 2-9 — Local Automobile Exhibition, Gray's Armory, Cleveland.
Feb. 9-14 — Tri-State Automobile and Sportsmen's Show, Detroit.
Feb. 14-21 — Third Annual Automobile Exhibition, Coliseum Building, Chicago.
Feb. 20 — Good Roads Convention, National Association of Automobile Manufacturers, Coliseum, Chicago.
Feb. 19 — Smoker for Trade Visitors, Convention Hall, Coliseum Building, Chicago.
Mar. 2-7 — Local Automobile Exhibition, Horticultural Hall, Philadelphia.
Mar. 9-14 — Local Automobile Exhibition, City Convention Hall, Buffalo.
Mar. 16-21 — Local Automobile Exhibition, Symphony Hall, Boston.
Mar. 23-28 — Local Automobile Exhibition, Light Infantry Armory, Washington, D. C.

and the exhibits will be arranged on either side between the pillars.

H. L. Jespersen, manager of the sporting goods department, is promoting the scheme, and expects to have the exhibit opened by March 1. He is visiting the different automobile shows for the purpose of interesting manufacturers, and the result of his efforts will no doubt be that at Macy's the prospective automobile buyer will be afforded the opportunity of seeing at all times motor vehicles of at least a score of different makes. As it is not expected that the exhibit will draw "show crowds" the visitor will be able to learn all about the cars in comfort, and if he desires may take a ride in one of the demonstrating machines kept for the purpose on the street level.

Notes of the Show.

A train of 30 cars to convey the machines of exhibitors at the Garden Show to Chicago was made up in New York by the efforts of the National Association, and is due to arrive in Chicago, February 6.

A count of the complete machines exhibited at the show gave a total of 253, divided as follows: Gasoline, 168; electric, 51; steam, 34. Among these were included delivery wagons, 8; bicycles, 8; trucks, 6; child's automobile, 1; quadricycle, 1; ambulance, 1; other vehicles, 228.

Owing to the rough weather on the Atlantic and consequent delay in the arrival of steamships several of the foreign exhibits did not arrive in time for the opening of the New York show. Special facilities were granted, however, by the custom house and when the vessels came into port speedy transfers of the imports were made to the show

An amusing incident in connection with souvenirs at the Automobile Show in Madison Square Garden occurred yesterday, says the New York *Sun*. A firm in Philadelphia mailed to the exhibitors souvenir cards, to each of which was attached a new dime and a new penny. There was one two-cent stamp on the envelope inclosing the cards, but there was two cents postage due on them when they arrived in New York. Seeing from the outside that the envelopes contained souvenirs, the exhibitors to whom they were addressed began to refuse to take them. A bright boy employed in the information bureau was distributing them. He knew what the envelopes contained. He took all that were refused and paid the due postage on them. He had 137 rejected envelopes and had cleared $12.33 before the true inwardness of his action was discovered and the proceedings stopped.

Various Trade Items of Interest.

The Moyea Automobile Co. has been incorporated at Albany with $100,000 capital and has elected officers and directors as follows: President, Richard T. Wainwright; vice-president, Sidney Dillon Ripley; secretary and treasurer, Henry C. Cryder; additional directors, Charles K. Beekman, and S. Stanwood Menhen. The office of the company is at 3 West 29th Street, New York.

The new station of the Worcester Automobile Co., in Worcester, Mass., will be located in the building which was for many years occupied as a Methodist Church. The building has been reconstructed and accommodations provided for a large number of vehicles. There is also a repair shop. The company is agent for the Knoxmobile in Worcester, and will also handle the Duryea gasoline and Columbia electric vehicles.

The Fischer Motor Vehicle Co., of Hoboken, N. J., has filed articles of incorporation in the Hudson County Clerk's office to manufacture and deal in automobiles and machinery for the same, with authorized capital stock of $2,000,000. Incorporators are Wm. H. Bennett, Chas. H. Stewart and Wm. H. Crolius.

The New Process Rawhide Co. has elected these trustees: Thomas W. Meacham, William B. Kirk, A. C. Vosburg, Charles L. Stone, D. E. Pettit, E. Laas, T. G. Meacham. The trustees have elected the following officers: President, T. W. Meacham; vice-president, W. B. Kirk; secretary and treasurer, A. C. Vosburg.

Harry C. Cryder, receiver of the Automobile Co. of America, has been authorized by the New Jersey Court to make a distribution of 5 per cent. of the assets of the company among the creditors.

The Brennan Mfg. Co., of Syracuse, N. Y., has elected these officers: President, George C. Cook; vice-president, Thomas J. Brennan; secretary, E. R. Deming; treasurer, Patrick H. Brennan. Arthur J. Perkins was elected a member of the board of directors in addition to the officers of the company.

Jos. Dysons & Sons, manufacturers of automobile forgings in Cleveland, have found it necessary to increase their facilities. They have erected a new building, giving them double the former floor space, and will install new hammers and other machinery. A new power plant will also be erected.

S. Rodgers, formerly with the Winton Motor Carriage Co., has formed a partnership to be known as Rodgers & Thatcher, 2625 St. Clair Street, Cleveland. They will manufacture gasoline vehicles, and a new touring car just completed will be exhibited for the first time at the Cleveland show.

B. M. Young, formerly of the Friedman Automobile Co., and Grant Murray, formerly with the Church Mfg. Co., of Adrian, Mich., designed the motor and car which is soon to be put out by the Standard Motor Vehicle Co., of Chicago. The machine is said to possess some interesting novel features.

Exports of automobiles and parts of same from the port of New York for the week ended January 24, are reported as follows: London, $6,208; Mexico, $2,580; British Possessions in Africa, $1,635; Southampton, $1,500; Cuba, $121; British West Indies, $20.

The I. A. Weston Co., which makes automobile parts, has filed a certificate with the secretary of New York State, setting forth that its principal business office has been removed from Syracuse to Jamesville.

E. K. Orr has resigned as Western representative of the Shelby Steel Tube Co., with headquarters in Chicago, to accept a position with Jos. T. Kyerson & Co., iron and steel merchants, of Chicago.

The Jackson Automobile Co., of Jackson, Mich., is building steam vehicles, which are ready for delivery now, and gasoline cars that will be ready for delivery about February 15.

The Automatic Lubricator Co. has moved its headquarters from Toledo, Ohio, to its Chicago office on the eleventh floor of the Caxton Building, 330 Dearborn Street.

Fire destroyed the factory of the Automobile & Cycle Parts Co., in South Chicago, recently. The loss is estimated at $150,000.

An addition to the plant of the Waltham Mfg. Co. is now being built at Waltham, Mass. The new structure is 110 feet by 40 feet in size.

NEW VEHICLES

The Jaxon Steam Car.

The Jackson Automobile Co., of Jackson, Mich., has given the trade name Jaxon to the new cars, both steam and gasoline, which it is now building; the former being ready for delivery and the latter to follow in a couple of weeks.

The Jaxon steam car is built as a runabout with or without a folding front seat placed so low as to avoid interfering with the view of the driver. A reachless gear of special construction is used, with artillery wheels, the wheel base being five feet five inches and the gauge four feet eight inches.

The steam engine has three cylinders 2 1-2 by 3 1-2 inches. By the use of a valve of rotary form but acting as a slide valve, all links, slides and eccentrics are dispensed with. The crankshaft runs in oil and provision is made for taking up the wear on the valve. The valve is driven by a roller chain, the adjustment being by changing the lower sprocket.

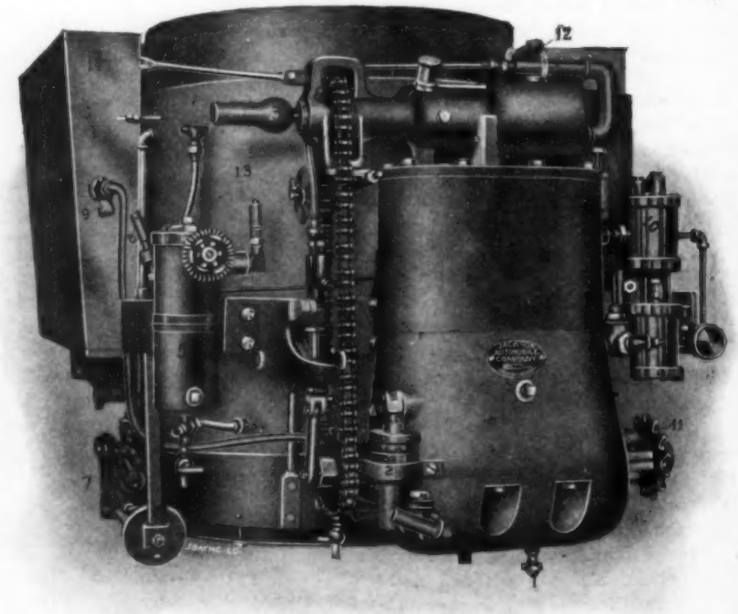
The lubrication is effected by means of a special oil pump, driven direct from the crankshaft by a rod, or at will by hand when there is no steam on the boiler. Oil is fed to the valve chest and cylinders.

The crankshaft is a solid steel forging with plain bearings, 1 1-4 inch diameter with 1 1-8 inch mitt pins. The connecting rods are backed with bronze and the cap studs and nuts are so fastened as to prevent all working loose of the nuts. The bronze bushings in the upper end are interchangeable.

The boiler is 17 inches in diameter, with 440 tubes of pure copper 14 1-4 inches long. Burner, pilot light and regulator are of strong and simple construction.

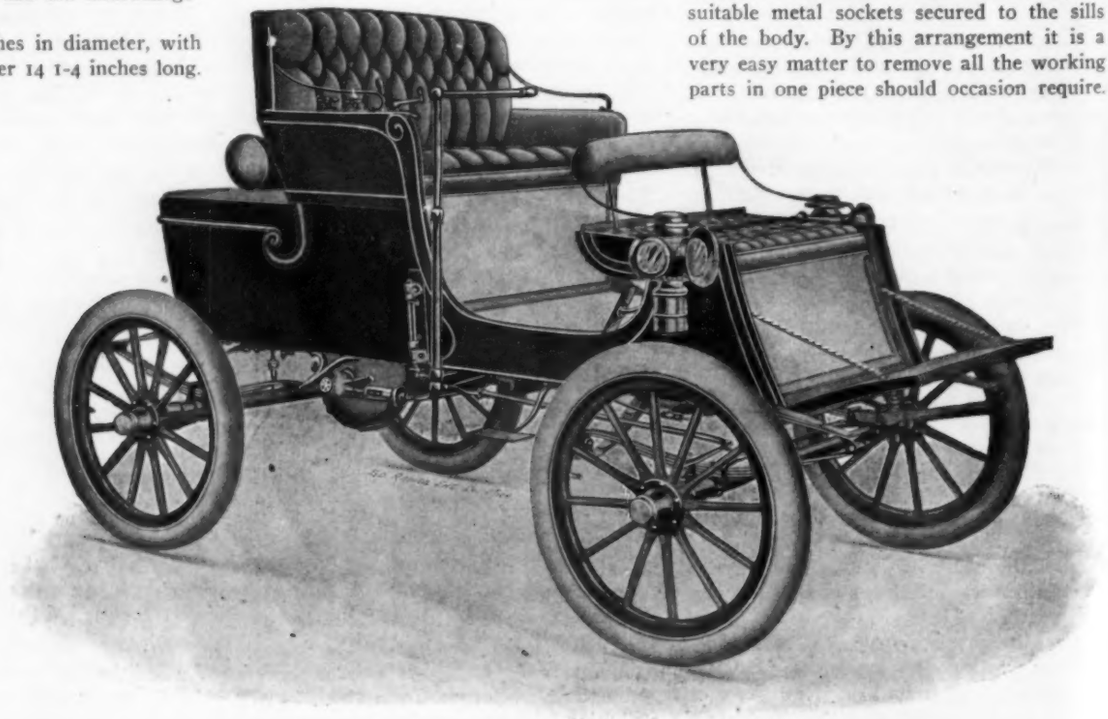
The engine has been designed with a view to efficiency and long life in everyday service, every care has been taken to reduce the wear to a minimum and to provide complete adjustment where some wear is inevitable.

The illustration will show at a glance the arrangement of all working parts, piping, valves, etc., which are mounted up complete on two steel supports running across forward of and abaft the boiler and resting in suitable metal sockets secured to the sills of the body. By this arrangement it is a very easy matter to remove all the working parts in one piece should occasion require.



MACHINERY EQUIPMENT OF THE JAXON STEAM AUTOMOBILE.

1—Inclosed Steam Motor, all parts working in oil. 2—Boiler Feed Pump. 3—Reverse Connection. 4—Automatic Cylinder Lubricator which pumps cylinder oil from a two quart reservoir to valve and pistons automatically and requires no attention except to fill reservoir when required, feed is adjustable. 5—Low Water Alarm and Water Column. 6—Automatic Fire Regulator. 7—Generator and Pilot Light. 8—Valve operated from end of seat to steam air pump. 9—Valve operated from end of seat regulating water to boiler. 10—Steam Air Pump. 11—Drive Sprocket fitted to taper shaft and very easily changed to a larger size for high speed or a smaller size for a very mountainous section. 12—Self Closing Throttle. 13—Large Steam Generator lagged with asbestos and covered with zinc. 14—Water Tank 30 gallons capacity fitted with a tank filler and ten feet of suction hose.



JAXON REACHLESS STEAM CAR, WITH FOLDING FRONT SEAT.

Packard Vertical Engine Car.

One of the highest priced automobiles at the Madison Square Garden Show was the Packard "Model K," which, aside from the question of price, attracted a great deal of attention, owing to the departure in practice from the accustomed models of this factory. It was a machine, in fact, which in design and construction, followed more closely the modern French practice than perhaps any other American built machine in the show. The name of "Packard" has hitherto been associated exclusively with the horizontal engine with single cylinder in the cars of medium power, and multiple cylinders in the more powerful machines.

The design of the new machine will be understood by an inspection of the accompanying photographs of the châssis which was on exhibition at the show. The design embraces a four-cylinder vertical motor, located in front, with cylinders 4-inch bore and 5-inch stroke. The ignition is jump spark, with imported De Dion plugs, supplied with current from a special storage battery charged in the usual manner.

The normal speed of the motor shaft is 950 revolutions. The motor is water cooled and the governor action is controlled by a notched sector and hand lever on top of the steering wheel, which can be set to give any motor speed from 150 to 1,500 revolutions.

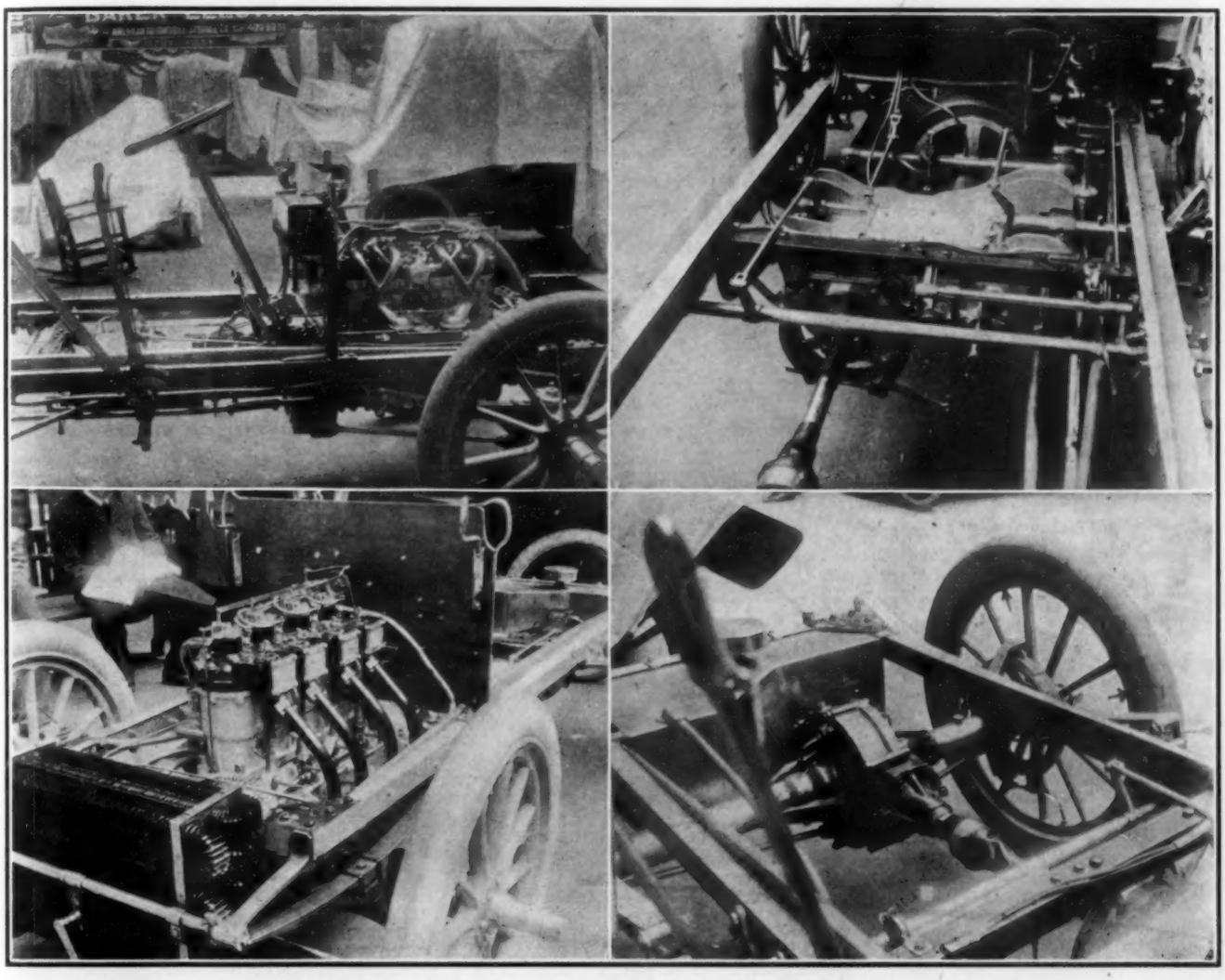
The transmission gear is a variable speed sliding spur gear arrangement, such that there is never more than one pair of gears in engagement or in motion. This gear gives four speeds forward and a reverse.

The wheels are artillery pattern, wood spoke, with steel hubs, and wood rim carrying a steel tire rim; the wheels are all 36 inches diameter, and the tires are 4-inch diamond clinchers. The wheel-base is 92 inches, 54-inch gage to the middle of the 4-inch tires. Weight of the châssis and wheels only 1,900 pounds. With tonneau body to seat four passengers 2,200 pounds. With the motor running at 950 revolutions, the four forward speeds are 11, 19, 31 and 45 miles an hour.

The steering is by wheel, with worm and tangent screw, with governor control on top of the hand wheel. There are two vertical levers outside, on the right of the body. The outside one is the emergency brake lever, and also releases the flywheel clutch when brought into action. In addition to this emergency brake there is a pedal actuated independent brake, which does not release the flywheel clutch when applied, but simply operates a clamp working on a brake drum fixed to the universally jointed propeller shaft. Another brake pedal applies hand brakes to the drums carried by the inside ends of the rear wheel hubs.

This ample brake scheme gives the driver the option of releasing the motor from the wagon drive entirely, and at the same time, by the use of both treadles simultaneously, applying the powerful brake to the propeller shaft, and also bringing the band brakes acting on the rear wheel hubs into action.

All of the gearing is encased, an aluminum casting with a removable top cover enclosing the speed change gear, while the balance gear and its bevel pinion are enclosed in a steel casting. The universal



DETAIL VIEWS OF THE PACKARD "MODEL K" CHASSIS EQUIPPED WITH FOUR CYLINDER VERTICAL ENGINE IN FRONT.

joints of the propeller shaft are also protected against dust, a flexible covering of water-proof glazed textile fabric being applied so as to cover these members.

The speed change gear is of the Panhard type, a nest of four spur pinions sliding on a squared shaft being made to give four speeds forward and a reverse, by successively engaging gears fixed on the propeller shaft. By an ingenious modification, the intermediate reversing pinion is placed in work by a double action of the single lever which is made to serve for both the speed changing and the reversing functions, by being first pulled backward, and then pushed sidewise a little way outward to effect the reversing pinion engagement; this double movement of the speed change and reverse lever shortens the gear travel and simplifies the construction advantageously.

All of the gearing is wholly enclosed, and the divided rear axle is abundantly supported in a sleeve steel casting, bronze bushed for the axle journals, and furnishing a rigid support for the ball bearings which take the bevel gear and pinion thrusts.

An elaborate system of lubrication is provided, embracing the use of forced feed grease and sight feed oil.

It is manifestly the intention of the builders to compete, in the marketing of this car, with the top-notch foreign builders who confine themselves to the production of high-priced, high-grade cars.

Jones-Corbin Light Runabout.

The new car here shown is built by the Jones-Corbin Co., 304 N. Broad Street, Philadelphia, for both city and country use, and is fully up to date in design and appearance, having the Mercedes hood and fan-cooling system. The wheel-base is 6 feet 6 inches, the weight is 675 pounds, and individual seats are fitted. An 8-horse power De Dion motor is used, with cone clutch and sliding gear. The speeds are twelve, twenty and thirty-five miles, with direct drive on the high speed. Chain transmission is used. The steering device is self-locking, and double-acting brakes are fitted on rear wheels and driving shafts. The tanks carry gasoline, oil and water for a 200-mile run. The neat and compact appearance of the car is well shown in the illustration.

JONES-CORBIN 8-HORSEPOWER, MERCEDES FRONT, LIGHT CAR.

Directory of American Automobile Clubs.

WITH NAMES AND ADDRESSES OF SECRETARIES.

AMERICAN AUTOMOBILE ASSOCIATION—S. M. Butler, 753 Fifth Avenue, New York.
AUTOMOBILE CLUB OF AMERICA—S. M. Butler, 753 Fifth Avenue, New York.
AMERICAN MOTOR LEAGUE—Frank A. Egan, 174 Broadway, New York.
ALBANY A. C.—Chas. M. Page, 99 Central Avenue, Albany, N. Y.
BERKSHIRE A. C.—L. A. Merchant, 86 North Street, Pittsfield, Mass.
BETHLEHEM A. C.—Wm. E. Martin, Bethlehem, Pa.
BLOOMSBURG A. C.—C. W. Funston, Bloomsburg, Pa.
A. C. OF BRIDGEPORT—F. W. Bolande, State Street, Bridgeport, Conn.
BRONX A. C.—F. M. Jeffries, Bronx Borough, New York City.
BUFFALO A. C.—John Satterfield, Prudential Bldg., Buffalo, N. Y.
A. C. OF CALIFORNIA—E. P. Brinegar, 415 Montgomery street, San Francisco, Cal.
CEDAR RAPIDS A. C.—Geo. Henderson, Cedar Rapids, Ia.
CHICAGO A. C.—Walter H. Chamberlin, 243 Michigan Avenue, Chicago.
A. C. OF CINCINNATI—L. S. Colter, 30 W. Seventh Street, Cincinnati, O.
CLEVELAND A. C.—Geo. Collister, Superior Street, Cleveland, O.
COLORADO A. C.—W. H. Bergtold, 624 Fourteenth Street, Denver, Col.
COLUMBIA UNIVERSITY A. C.—R. C. Gaige, Col. University, New York City.
COLUMBUS A. C.—Campbell Chittenden, Broad Street, Columbus, O.
COUNCIL BLUFFS A. C.—Tom S. Farnsworth, Council Bluffs, Iowa.
DAYTON A. C.—W. Webster Ensey, Dayton, Ohio.
A. C. OF DETROIT—W. S. Burtenshaw, Detroit, Mich.
GRAND RAPIDS A. C.—John T. Byrne, Michigan Trust Bldg., Grand Rapids, Mich.
HARTFORD A. C.—Walter G. Cowles, Box 426, Hartford, Conn.
HERKIMER A. C.—W. I. Taber, Herkimer, N. Y.
A. C. OF HUDSON COUNTY—Frank Eveland, Jersey City, N. J.
A. C. OF ILLINOIS—M. Scott, 1215 Marquette Bldg., Chicago, Ill.
A. C. OF INDIANA—J. A. McKim, Indianapolis, Ind.
A. C. OF KANSAS CITY—M. A. Albertson, Kansas City, Mo.
LONG ISLAND A. C.—Read Halliday, Lincoln Club, Long Island, N. Y.
A. C. OF MAINE—Chas. P. Hatch, Portland, Me.
A. C. OF MARLBOROUGH—J. F. J. Otterson, Marlborough, Mass.
A. C. OF MARYLAND—C. Warner Stork, Altamont Hotel, Baltimore, Md.
MASSACHUSETTS A. C.—F. L. D. Rust, 761 Boylston Street, Boston, Mass.
MILWAUKEE A. C.—W. J. Merkel, 1095 Twenty-sixth Avenue, Milwaukee, Wis.
A. C. OF MINNEAPOLIS—S. D. Andrews, Minneapolis, Minn.
MONMOUTH A. C.—Geo. W. Pittinger, Asbury Park, N. J.
NATIONAL CAPITAL A. C.—Erskine M. Sunderland, 819 Fourteenth Street, Washington, D. C.
A. C. OF NEW JERSEY—W. J. Stewart, 8 Central Avenue, Newark, N. J.
A. C. OF NEW ORLEANS—Sam Stone, Jr., Progressive Union, New Orleans, La.
NORTH JERSEY A. C.—Ed. T. Bell, Jr., Paterson, N. J.
NORTH SHORE A. C.—Quincy A. Shaw, Jr., Prider Crossing, Mass.
PASADENA AUTOMOBILE CLUB.—J. T. Pugh, Pasadena, Cal.
A. C. OF PHILADELPHIA—Frank C. Lewin, 1404 S. Penn Square, Philadelphia, Pa.
RHODE ISLAND A. C.—H. H. Rice, Crown Hotel, Providence, R. I.
A. C. OF ROCHESTER—Frederick Sager, 16 State Street, Rochester, N. Y.
A. C. OF SAN JOSE—B. D. Merchant, San Jose, Cal.
A. C. OF SPRINGFIELD—F. A. Hubbard, Springfield, Mass.
A. C. OF ST. LOUIS—E. M. Senseney, 2829 Washington Avenue, St. Louis, Mo.
A. C. OF SYRACUSE—F. H. Elliott, 517 E. Water Street, Syracuse, N. Y.
TOLEDO AUTOMOBILE CLUB—Geo. A. Palmer, Toledo, Ohio.
TOPEKA A. C.—R. D. Montgomery, Topeka, Kan.
A. C. OF TRENTON—Edward S. Wood, Trenton, N. J.
TROY A. C.—J. S. Thiell, Troy, N. Y.
WORCESTER A. C.—H. E. Shiland, Worcester, Mass.